AIR FORCE

QUALIFICATION TRAINING PACKAGE (AFQTP)

for

READINESS

(3E9X1)

MODULE 14

WARTIME OPERATIONS

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Career Field Education and Training Plan (CFETP) references from 1 Apr 97 version.

OPR: HQ AFCESA/CEOT

Certified by: HQ AFCESA/CEO
(Colonel William R. Pearson)

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INTRODUCTION

Air Force Qualification Training Packages (AFQTPs) are step-by-step procedural guides describing how to perform a certain task identified in the Specialty Training Standard (STS) portion of the Career Field Education and Training Plan (CFETP). The procedures represent the Air Force's standardized method of accomplishment for personnel in the READINESS specialty. In addition, the authors of these AFQTPs have included hints and personal expertise to aid the trainee in perfecting their skills on the task or the piece of equipment associated with the task.

AFQTPs do not take the place of on-the-job training. An AFQTP is intended to:

- Standardize the training procedure for a task/piece of equipment.
- Enhance the On-the-Job Training (OJT) Process.
- Provide "just-in-time" training for a task/piece of equipment.
- Provide the minimum knowledge on a task/piece of equipment when a unit does not have the equipment.

Put this package to use. We hope you'll find it a valuable tool which aids you in becoming a competent READINESS journeyman/craftsman. These AFQTPs were originally authored by field personnel SMSgt Tom Morris, MSgt Ken Merritt, and TSgt Robert Frank. They were revised, compiled and edited by SSgt Kevin Maynes under the direction and guidance of HQ AFCESA/CEOT. If you have any recommendations for improving this document, please contact the READINESS Career Field Manager, TSgt Ron Childs at the address below.

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This AFQTP book contains the following sections:

- **Introduction.** This section gives an overview on the purpose of AFQTPs and their use.

- **Trainer's Guide.** The guide contains information the trainer needs to know in order to manage the trainee's completion of AFQTPs.

- **Trainee's Guide.** The guide contains information the trainee needs to know about completing AFQTPs.

- **Improvements/Correction Letter.** This section contains an *Improvement/Corrections Letter* to make recommendations concerning this training product.

- **AFQTP Completion Verification.** Page for trainee and trainer to verify completion of the AFQTPs for the READINESS AFS.

- **AFQTPs.** This section contains the *Task Training Guide* (step-by-step instructions), background information, review questions, confirmation key, and performance checklist for each READINESS AFQTP. The performance checklists are used by the trainer to verify a trainee has learned the objectives for each AFQTP. (These are <u>not</u> the final tests.)

- **AFQTP Tests.** <u>Element Tests are not included in this book</u>. Initial Element Tests will be sent out on disks to all Unit Training Managers who will manage and control these tests. Upgrade versions of these tests will be made available on future revisions of CerTests. Failure to manage the tests compromises the integrity of the AFQTP evaluation process and the overall training program. Exact testing procedures will be left to the discretion of the individual units. (**Note:** Unit Training Managers should refer to AFI 36-2301, *Professional Military Education*, for specific responsibilities of a Test Control Office.)

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TRAINER'S GUIDE

These Air Force Qualification Training Packages (AFQTPs) were developed to enhance on-the-job training (OJT) for READINESS personnel. This guide will help you lead the trainee in gaining enough knowledge to perform the specified tasks. It will also aid task certifiers in evaluating trainees for task certification.

It is important for you and your trainee to know that an AFQTP does not replace hands-on-training, nor will successful completion of an AFQTP meet the requirement for task certification. AFQTPs' intentions are listed in the Introduction Section of this guidebook.

AFQTPs were written for a trainee to satisfy one or more tasks identified in the READINESS Specialty Training Standard (STS). To best instruct the trainee on the tasks, they were divided into numerous AFQTPs. Each AFQTP has a *Task Training Guide* explaining what the trainee must learn (learning objectives), training references, and most importantly, step-by-step instructions the trainee must follow to accomplish the task.

As the trainer, you play a vital role in the training process. It is important that you understand and perform your responsibilities and duties in administering the AFQTPs. Your responsibilities are:

- Review the AFQTP with the trainee. You have the flexibility to arrange training for each module, unit, and AFQTP in the order you decide, based on your schedule and local conditions.

- Review the AFQTP with the trainee and:

  a. Ensure the trainee meets the prerequisites for taking the AFQTP.

  b. Review the training references with the trainee to better understand each learning objective.

  c. Ensure the trainee understands the learning objectives. If the trainee has any questions, clarify the AFQTP objective expectations.

  d. Go over the AFQTP process with the trainee and ensure they understand the requirements for successful completion.

  e. Establish a time schedule for the trainee to complete the entire AFQTP module.

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The AFQTP Process is as follows:

- Unit Training Manager will issue each trainee copies of the AFQTPs applying to their AFS. Each shop will maintain a binder with all the AFQTPs, without the answer keys.

- Trainer reviews the AFQTP list with the trainee going over the different modules, units, and AFQTPs.

- Trainer and trainee determine a time schedule for the trainee to complete the entire AFQTP module. Do not leave it open-ended. Remember, the objective of the AFQTP program is for the trainee to gain knowledge, so allow sufficient time for the trainee to learn each task thoroughly.

- Included as part of the trainee's AFQTP package are review questions and a confirmation key. Trainees will answer the review questions upon completion of the learning objectives. The trainee can use the *Task Training Guide* and additional technical references in order to answer the questions. The trainee will then verify their answers using the confirmation key. It is highly recommended that the trainer remove this confirmation key from the back of the module prior to administering the QTP to the trainee.

- Upon notification from the trainee that they are ready to test, the trainer will first evaluate the trainee's readiness using the AFQTP's performance checklist. Once you are satisfied the trainee understands the learning objective, arrange with the Unit Training Manager for the trainee to take the AFQTP test. to pass, The trainee must score a minimum of 80%. The trainer will review any missed questions with the trainee to ensure understanding of the material.

- If the trainee does not meet the learning objectives, the trainer and the trainee need to review the missed areas until the trainee meets the objectives. Conduct feedback sessions with the trainee on each AFQTP as often as you feel is necessary.

- After the trainee successfully completes an AFQTP, the trainee may proceed onto the next AFQTP within the module/unit. Upon the trainee's successful completion of an entire AFQTP, the trainer and trainee will sign the AFQTP Completion Verification page. The trainer will enter a completion notification on an AF Form 623a, *On-the-Job Training Record Continuation Sheet*, in the trainee's training record.

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TRAINEE'S GUIDE

These Air Force Qualification Training Packages (AFQTPs) were developed to enhance your on-the-job training (OJT). They provide you with the standardized steps necessary to complete the mandatory tasks identified in the Specialty Training Standard (STS) section of your Career Field Education and Training Plan (CFETP). AFQTPs are not intended to replace hands-on training or substitute for task certification.

Subject matter experts (the authors) have made the learning process more effective by subdividing the training material into teachable modules, units, and AFQTPs. Your trainer has the flexibility to arrange training for each module/unit/AFQTP in the order that best meets your schedule and local conditions. Each AFQTP has a *Task Training Guide* which identifies the training references, prerequisites, tools, learning objectives, and the step-by-step procedures for accomplishing the task.

Prior to beginning an AFQTP there are a number of things you should do:

- Ensure your trainer explains the AFQTP process and your responsibilities in that process.
- Review the module/unit/AFQTPs and the *Task Training Guide* with your trainer.
- Review the training references to better understand the objective of each module and to ensure you meet all the prerequisites. If you have any questions about the objective or learning expectations, ask your trainer. Ask early on so you do not flounder through an AFQTP only to learn you misunderstood the learning objective.

AFQTP Testing

Each AFQTP has review questions to help determine if you achieved the learning objectives. You can use the *Task Training Guides* or technical references when completing the review questions. A review question confirmation key is also included with each AFQTP. The review questions provide immediate feedback, thereby reinforcing learning. Ask your trainer to explain any questions you don't understand. Refer to applicable references for more detailed information.

When you feel you are ready to test on an AFQTP, inform your trainer. The trainer will use the performance checklist to evaluate your mastery of the learning objectives. If your trainer determines you are ready, you will be scheduled to take the AFQTP test. Your Unit Training Manager will administer the test. You must score a minimum of 80% to successfully pass an AFQTP test. After you successfully pass the AFQTP test, you and your trainer will sign the AFQTP Completion Verification page. In addition, the trainer will enter the completion on an AF Form 623a, *On-the-Job Training Record Continuation Sheet,* in your training records.

Keep in mind, passing an AFQTP does not relieve you of the responsibility to become hands-on certified, if required. If you do not successfully accomplish an objective, your trainer will review the missed areas with you. You will be given additional time to learn the material until the objective is successfully met.

HINT:

Within normal workload constraints, set aside sufficient time to work on the package. Studies into effective training programs indicate that the best trainees reserve the same time each day to complete their study. Pace yourself, establish a schedule, and stick to it. Give yourself top priority to become qualified.

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IMPROVEMENTS/CORRECTIONS LETTER

MEMORANDUM FOR HQ AFCESA/CEOT

FROM:

SUBJECT: Improvement/Correction to AFQTP 3E9X1XX.XX

1. ***List any improvements/corrections you may have about this AFQTP. Please be specific as to the page, reference, and element.***

2. ***Please include your name, organization, address, DSN and fax so we can contact you if we have any questions or need some clarification with your recommendations.***

(Send your comments to the address listed in the *Introduction* section of this guidebook.)

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MODULE 14

WARTIME OPERATIONS

AFQTP Completion Verification

AFQTP	Trainer's Signature	Trainee's Signature	Date Completed
14.1. Evaluate Threat to Air Bases			
14.3.4. Determine Protective Equipment Requirements			
14.3.5. Conduct Wartime Tasks Wearing Personal Protective Equipment			
14.4.6. Determine Appropriate Biological Protective Measures			
14.6.3.1. Implement Exposure Control Actions			
14.6.3.3. Conduct Contamination Control (CCA) Procedures			
14.7.3. Employ Protective Actions			
14.8.1. Evaluate Adequacy Of Local Alerting System			
14.8.2. Advise On Use Of Warning Signals			
14.9.2. Establish Information Flow			
14.9.3. Direct Activation Of Specialized Teams			
14.9.4. Monitor And Direct Readiness Of NBC Forces			

MODULE 14

WARTIME OPERATIONS

AFQTP Completion Verification

AFQTP	Trainer's Signature	Trainee's Signature	Date Completed
14.9.5. Monitor Passive Defense Measures			
14.9.7. Direct Monitoring Team Actions			
14.9.8. Receive And Consolidate Reports			
14.9.9. Read Maps/Use Location Reference Materials			
14.9.10.1. Simplified Plots			
14.9.10.2. Detailed Plots			
14.9.10.3. Assess Chemical Hazards			
14.9.10.4. Determine Chemical Persistency			
14.9.11.1. Simplified Plots			
14.9.13. Prepare NBC Reports			
14.9.15. Interpret NBC Reports			
14.9.16. Annotate Radiation And Chemical Situation Boards			
14.11.2.2. Assess CCD Requirements			
14.11.2.3.1. Camouflage Netting			

MODULE 14 **AFQTP UNIT 1**

EVALUATE THREAT TO AIR BASES

(14.1.)

EVALUATE THREAT TO AIR BASES

Task Training Guide

STS Reference Number/Title:	14.1., Evaluate threat to air bases
Training References:	• AFI 10-212, Air Base Operability; Current intelligence reports; QTP 12.2.2. Perform Hazard Analysis.
Prerequisites:	• Possess as a minimum a, 3E931 AFSC. • Review AFI 32-4007; AFMAN 10-401 Chapter 13., or FM 3-4, AFI 32-4007.
Equipment/Tools Required:	• N/A
Learning Objective:	• Trainee should be able to utilize sources of information to determine the threat to an air base.
Samples of Behavior:	• Trainee should be able to gather information necessary to evaluate an air base. The trainee will be able to compile this information and describe the threat to the base.
Notes:	
Items used to evaluate the threat to air bases may be "CLASSIFIED". Ensure that the trainee is briefed fully and doesn't compromise any sensitive information.	

EVALUATE THREAT TO AIR BASES

Background: One of your jobs in Readiness is to plan and prepare for enemy attacks. In order to do this you must know what type of attacks to prepare for. It is vital that this information is accurate and up to date. You can gather this information from quite a few sources, such as National Air Intelligence Center documents, Worldwide Chemical-Biological Threat To Air Bases 1995-2005, current intelligence reports, flying operations, AFOSI, etc. This information will usually be classified, so you must be careful in how you apply it to your plans or operations.

Gather the information from the following agencies:

Intelligence:

- The intelligence office will probably be your first stop in obtaining the information you need to evaluate the threat. This is where you will receive the bulk of the information that you will need. They can give you their estimates of the enemy's capabilities. They can describe the type of attack that is most likely to occur and whether it will be aircraft, missiles, ground, special forces, terrorist, conventional, chemical, or biological. They should be able to give you the number and type of aircraft, navigation systems, radar capabilities, type of armament, and target acquisition aids. They may also provide you with a list of key targets, such as C-2 facilities, fuel storage and distribution systems, power stations, and water treatment facilities, etc.

AFOSI:

- The OSI can give you information on terrorist activities, or situations involving political unrest that may affect your base.

Security Police:

- The security police can help you evaluate the threat from a ground perspective. They can identify the weaker areas of the base where ground assaults, special operating forces or terrorist, may occur.

Operations:

- The operations folks can advise you on typical aircraft attack corridors and profiles. Since you're getting the pilots perspective you can also find out what landmarks they might use. This will help to identify the enemy's likely targets.

Use the gathered information to evaluate the threat to air bases. Use the readiness council as a forum to ensure all units on your base agree upon the threat. This will keep all the units on your base working towards the same goal.

Use this information and the readiness council to create passive defense plans, such as CCD, dispersal, hardening, blackout, shelter, etc. If you deploy to another location you can tailor these plans to meet your new threat. Ensure the information is current and update plans as necessary.

CCD:

- This information is vital for an effective CCD plan. By understanding the enemy's radar capabilities and target acquisition aids you will know which CCD measures should be more effective. By having a good idea of their attack profiles you will be able to place your CCD assets where they will have the most effect. For more information on CCD plans refer to QTP 14.11.2.2; AFI 32-4007; AFMAN 10-401 Chapter 13; or FM 3-4.

Dispersal:

- Once you're aware of the probable attack profiles you can ensure that your equipment is dispersed away from these areas. Also you can make sure that your damage assessment teams have more than one route to their area of responsibility. For more information refer to QTP 14.9.5; or AFI 10-211.

Hardening:

- Your list of key targets will serve as an excellent guide to determine which facilities should receive additional hardening. In addition, the type of attack that you expect will help determine which areas should receive more attention. For more information refer to QTP 14.9.5; or AFI 10-211.

Shelter:

- We need the attack corridors so that we can ensure our shelters aren't in the path. We may also use the information that we've gathered to harden or apply CCD measures to certain shelters. For more information refer to QTP 14.9.5; or AFI 10-211.

I'm sure that as you read this, other ideas for ways to use this information have popped into your head. We've covered just a few uses for this information above. Everything that you do to prepare for war is based on an evaluation of the threat to your air base. Your MOPP levels are based on the threat of chemical agent use. The air base ground defense is patterned towards the threat. Damage assessment, CCA procedures, protective equipment, and all other BRAAT activities are created for and molded to the threat. That is why it is vital that your threat information is current. If the threat changes you must make sure your procedures and guidance are updated. As you receive new equipment or procedures you must incorporate these into the base plans. Only by doing this will you ensure that your base is prepared at all times.

Review Questions
for
Evaluate Threat To Air Bases

Question	Answer
1. Who will have the most current information on the threat to your base?	a. Readiness b. Operations c. Intelligence d. Security Police
2. Who is best qualified to identify the weaker areas of the base from ground attacks?	a. Readiness b. Operations c. Intelligence d. Security Police
3. Who is best qualified to identify possible attack corridors for enemy aircraft?	a. Readiness b. Operations c. Intelligence d. Security Police
4. Who should you contact to determine if the use of NBC weapons are possible?	a. Readiness b. Operations c. Intelligence d. Security Police

EVALUATE THREAT TO AIR BASES

Performance Checklist		
Step	**Yes**	**No**
1. Give the trainee a map of the base.		
2. Give the trainee a threat scenario to review.		
3. Did the trainee successfully brief on the threat?		
4. Did the briefing include measures to limit the threat, such as CCD, dispersal, blackout, etc.?		

FEEDBACK: Trainer should provide both positive and/or negative feedback to the trainee immediately after the task is performed. This will ensure the issue is still fresh in the mind of both the trainee and trainer.

MODULE 14 **AFQTP UNIT 3**

DETERMINE PROTECTIVE EQUIPMENT REQUIREMENTS

(14.3.4.)

DETERMINE PROTECTIVE EQUIPMENT REQUIREMENTS

Task Training Guide

STS Reference Number/Title:	14.3.4., Determine protective equipment requirements
Training References:	• AFJPAM 32-4008 • TO 11C15-1-3
Prerequisites:	• Possess as a minimum a, 3E931 or higher AFSC.
Equipment/Tools Required:	• N/A
Learning Objective:	• Trainee should be able to determine protective equipment requirements.
Samples of Behavior:	• The trainee should be able to determine the protective equipment requirements during a basic chain of events leading to a chemical attack.

DETERMINE PROTECTIVE EQUIPMENT REQUIREMENTS

Background: One of your primary duties is to operate the NBCCC. The survival recovery center commander is going to look to you to make recommendations on the protective equipment to wear. Use your knowledge of chemical agents to determine which protective equipment you need to wear. Use MOPP levels to ensure the base populace is in the appropriate protective posture. For nerve and blister, the entire suit including mask and hood is required. For blood and choking agents only the mask may be required. Use intelligence reports to determine what the chemical threat is at your location. With additional information from Intelligence, Emergency Action (EA) cell, other bases, HQ, etc., you can determine if you need to change the protective posture.

INPUT:

- Intelligence has briefed the enemy has the capability of delivering nerve, blister, and blood agents to your air base. This doesn't mean that you should start wearing the chemical ensemble, but you should ensure base personnel have all their gear checked and readily available.

- Your NBCCC receives an NBC report. The enemy has just used blood agents on forward area operating troops. This may drive you to recommend MOPP 2 for the base, but it would depend on many other variables, such as the proximity of the enemy from your base or the likelihood of an attack at your base, to name just a couple.

- The EA cell announces that enemy aircraft are 10-15 minutes from your airspace. If your base is not in MOPP 2, you should assume that protective posture now.

- The EA cell announces that enemy aircraft are 3-5 minutes from your airspace. The Wing Commander puts the base in Alarm Red. At this time you would ensure the base is assuming MOPP 4.

INPUT:

- Your base is under attack.

- The EA cell announces that enemy aircraft have departed your airspace. The Wing Commander puts the base in Alarm Black. The base must remain in MOPP 4 until the chemical testing has been performed and the results are negative.

- Damage assessment teams start reporting gold color changes on M8 paper. Chemical monitoring teams start reporting findings of persistent G nerve agent on the base. The base must remain in MOPP 4 until they process through a CCA, whether it's off base or into a collective protective facility. All operations conducted outside of a CCA must be in MOPP 4 until the nerve agent has dissipated and the test results are negative.

This is a simple example of what chain of events might occur to drive you to determine the protective equipment requirements for your base. You will have more information to work with as well, from a full intelligence briefing to the knowledge of your base's mission. These factors will greatly influence your recommendations.

Review Questions
for
Determine Protective Equipment Requirements

Question	Answer
1. As soon as chemicals are used anywhere in your theater of operations you will assume MOPP 2 as a minimum.	a. True b. False
2. If intelligence reports indicated the enemy didn't have a chemical strike capability you would still assume they did, to prepare for worst case scenarios.	a. True b. False
3. From what agency will you receive information affecting your recommendations on protective postures?	a. Chemical Monitoring Teams b. Intelligence c. Other bases d. All of the above
4. Acting as the Readiness representative in the Survival Recovery Center (SRC), who will you make the protective posture recommendation to?	a. SRC Commander b. Wing Commander c. HQ d. Both a and c

DETERMINE PROTECTIVE EQUIPMENT REQUIREMENTS

Performance Checklist		
Step	**Yes**	**No**
1. Give the trainee a scenario similar to the one in the QTP to test their ability to make the right recommendation.		
2. Did the trainee review the incoming information from Intelligence?		
3. Did the trainee understand the threat?		
4. As hostilities escalated did the trainee recommend the correct protective posture without being prompted?		
5. Did the trainee give the consequences if recommendations aren't followed?		
6. When the trainee didn't have the needed information, did they know where to go for that information?		

FEEDBACK: Trainer should provide both positive and/or negative feedback to the trainee immediately after the task is performed. This should ensure the issue is still fresh in the mind of both the trainee and trainer.

MODULE 14 **AFQTP UNIT 3**

CONDUCT WARTIME TASKS WEARING PERSONAL PROTECTIVE EQUIPMENT

(14.3.5.)

CONDUCT WARTIME TASK WEARING PERSONAL PROTECTIVE EQUIPMENT

Task Training Guide

STS Reference Number/Title:	14.3.5., Conduct wartime tasks wearing personal protective equipment
Training References:	• TOs 14P3-1-141 and 14P4-15-1
Prerequisites:	• Possess as a minimum a, 3E931 AFSC.
Equipment/Tools Required:	• Ground Crew Ensemble (GCE).
Learning Objective:	• The trainee should be able to complete a wartime task while wearing the GCE.
Samples of Behavior:	• The trainee should be able to demonstrate the ability to perform their wartime job in a chemical environment. The GCE must be worn in the proper configuration at all times.

Background: There are many different jobs you perform in wartime which would require you to wear chemical protective equipment. Though the tasks may differ many procedures for wearing the protective equipment will remain the same. An area of primary concern is contamination avoidance. Other areas of concern are the proper wear of the personal protective equipment, proper configuration, serviceability, and the ability to perform the task while wearing the gear. Personal protective gear consists of the ground crew ensemble (GCE) and field gear. The commander uses the threat to determine which items you will wear.

Contamination Avoidance:

- Contamination avoidance is performed in three phases: Pre-attack, Trans-attack, and Post-attack. Some basic duties to perform during these phases are:

Pre-Attack:

- Move mission essential vehicles, equipment, and supplies indoors. Cover the remaining exposed items with tarpaulins, plastic sheets, or anything that's reasonably available to protect them from CW agents. Keep building and vehicle windows and doors closed. Establish a single point of entry/exit for all buildings and restrict ingress/egress to these points.

Trans-Attack:

- Immediately take cover and, if a chemical threat exists, assume MOPP-4. If no overhead protection is available, use ponchos, plastic sheets, or any expedient cover to minimize exposure to CW agents. Don't seek overhead protection by crawling under any vehicle, as the risk clearly outweighs any potential benefits you may gain by doing this.

Post-Attack:

- Make every reasonable effort to avoid crossing through cordoned areas. When necessary, perform personal expedient decontamination using dry absorbent powder, M258A1, or M291 personal decontamination kits. Also, decontaminate vehicle access handles, equipment controls, and other mission essential items before touching them. Don't drive contaminated vehicles into any toxic free area. Before taking a drink in MOPP-4, decontaminate your gloves, mask drinking tube coupling, and M1 canteen cap with the M258A1 or M291 personal decontamination kit if you suspect they've been contaminated. Avoid sitting in, leaning against, or kneeling on any contaminated areas during MOPP-4.

PROPER WEAR OF PROTECTIVE EQUIPMENT**:** The purpose of the Ground Crew Ensemble (GCE) is to protect the wearer from field concentrations of chemical warfare agents. In order for this to happen it is imperative that the GCE is kept in good condition and worn properly. Reference T.O.s 14P3-1-141 and 14P4-15-1 for information on proper wear of the GCE.

Task Performance: Some jobs that might be considered easy in a conventional environment may seem very difficult in a chemical environment. We need to ensure that all wartime tasks can be performed while wearing the GCE. Two of the jobs you may perform in a chemical environment are NBCCC duties and chemical monitoring. You may also be called upon to assist CCA or contamination control teams.

*NBCCC***:** Since this function is performed inside you may not think it would be particularly tough in a chemical environment. Keep in mind, however, you will be located in the SRC, where all the information from the base flows into. A lot of noise will be generated from the communication equipment everyone is using. Remember to use the front voicemitter on your mask designed for radios and face to face communication, and the side voicemitter for telephones. When using any kind of communication device be sure to speak loud and clear. It is essential to keep your working area organized, because while your in the gear you lose a lot of vision and may misplace some paperwork, NBC reports, damage assessments, taskings, etc. The SRC becomes even more crowded when everyone dons their GCE. Plotters will have to spend more time plotting and the reports clerk will have a harder time as well. Bear in mind, this is not an excuse to work slower, peoples lives are depending on you.

Chemical Monitoring Teams:

- Naturally this task is performed outside. That being the case, proper wear of the GCE is critical. Contamination avoidance procedures are essential for this team. Once alarm black is announced you will proceed on your chemical monitoring routes. Be careful, your vision will be reduced while wearing the mask and it may be difficult to identify hazards. Since you will be walking outside at times, make sure your footwear covers are tight. You will have to check out your automatic agent detectors periodically. While doing this be careful not to kneel, be aware of the snaps connecting the pants and jacket if you have to do any bending. Also, the unit itself may be contaminated, if decontamination is necessary you will have contaminated waste to dispose of as well. If the entire base is contaminated you're going to have some contamination on you. The key to keeping this level as low as possible is through contamination avoidance and proper wear of the suit to avoid contact with the agent. You may also be tasked to advise/support CCA operations and contamination control teams. You can see that you're going to be kept busy. Ensure that you and your team drink plenty of water to keep hydrated. Also be aware that heat stress is a possibility even if your not performing strenuous work.

CCA Teams:

- CCA teams are unique because they are working in an originally clean environment with the base populace coming to them in a contaminated state. Not only must you practice contamination avoidance, but you have to ensure the people processing practice it as well. You may have to work in close quarters with the people processing which creates additional hazards. If you have to help someone you must try not to touch that individual. This is a big part of limiting the contamination to that area.

Contamination Control Teams:

Contamination control teams are responsible for performing decontamination of critical assets. You like everyone else on base must wear the suit properly. Because of the nature of your mission you must go above and beyond in contamination avoidance. When you perform a decontamination operation with water, you must control the runoff and mark it as contaminated. Unfortunately this puts you at a greater risk, because of the concentrated contamination you are working with. To counteract this, wear rain gear over the GCE. This gives some additional protection from the agents, but more importantly protects the GCE from the water and even fuel you might use during your operations.

Review Questions
for
Conduct Wartime Tasks Wearing Personal Protective Equipment

Question	Answer
1. Chemical monitoring teams will be responsible for checking most of the automatic detectors.	a. True b. False
2. Decontaminating an object is an example of contamination avoidance.	a. True b. False
3. What is a restriction caused by wearing the personal protective equipment?	a. Reduced field of vision b. More time to rest c. Chemical protective mask has two voicemitters d. All of the above

CONDUCT WARTIME TASKS WEARING PERSONAL PROTECTIVE EQUIPMENT

Performance Checklist		
Step	**Yes**	**No**
1. Give the trainee a wartime task to accomplish while wearing the GCE.		
2. Did the trainee wear the suit properly?		
3. Was the hood in the proper configuration?		
4. Were contamination avoidance procedures practiced?		
5. Did the trainee complete the assigned task?		

FEEDBACK: Trainer should provide both positive and/or negative feedback to the trainee immediately after the task is performed. This will ensure the issue is still fresh in the mind of both the trainee and trainer.

MODULE 14 **AFQTP UNIT 4**

DETERMINE APPROPRIATE BIOLOGICAL PROTECTIVE MEASURES
(14.4.6.)

DETERMINE APPROPRIATE BIOLOGICAL PROTECTIVE MEASURES

Task Training Guide

STS Reference Number/Title:	14.4.6., Determine appropriate biological protective measures
Training References:	• Readiness Flight CONOPS. • AFI 10-212, *Air Base Operability.* • AFI 32-4001, *Disaster Preparedness Planning and Operation.* • Readiness Training Package C3, *Biological Warfare Agents and Defense Actions.*
Prerequisites:	• Possess as a minimum a 3E931 or higher AFSC.
Equipment/Tools Required:	• N/A
Learning Objective:	• Trainee should be able to determine appropriate biological protective measures.
Samples of Behavior:	• Trainee should be able to identify biological protective measures and determine when they should be implemented
Notes:	

DETERMINE APPROPRIATE BIOLOGICAL PROTECTIVE MEASURES

Background: One of your responsibilities is to determine protective measures for biological agents. In order to do this you must know what biological agents to protect against. You must also know the type of delivery systems likely to be used. If the enemy has the capabilities to use biological agents they probably have a chemical capability as well. Biological defense requires less protection than chemical defense measures, so your protective measures and equipment are more than adequate. Currently there is no field detection unit in the Air Force to provide your base with immediate warning, as there is for chemical agents. So when discussing biological protective measures we must include detection methods. Several agencies on your base provide input that you'll use to determine appropriate protective measures. In the following paragraphs we'll discuss which units provide certain information. We will look at peacetime, deployment, and the three phases of attack and determine which measures should be used.

- **PEACETIME:** Now is the time to plan for every contingency. Your NBC defense program should already be in place and account for biological defense. A few other items are listed below;

    - HEALTH*:* Good health is important because it enhances your body's natural ability to resist and fight infection. A regular exercise program and good eating habits are essential steps to good health.

    - IMMUNIZATIONS*:* It's important to keep your immunizations up to date because this strengthens your immune system and helps protect you from biological agents.

    - TRAINING*:* Biological warfare (BW) defense is taught during CBWDT. Incorporate new information into your classes and information program to attain widest possible dissemination.

- **DEPLOYMENT:** If you know your deployment location you may accomplish some of the measures in this section during peacetime.

    - BASE INTELLIGENCE*:* Intel will assess the biological threat based on capability, delivery systems, known use, and movement from storage to launch facilities. Once your base has this information you should be able to prepare a defense against certain agents.

    - MEDICAL*:* Ensure that all deploying personnel have received their immunizations. If medical has received the threat information they may also begin vaccinations for those particular agents. They should ensure their personnel in or subject to deployment to high threat areas receive prophylactic vaccinations based on DOD direction.

- NBC GCE*:* AFI 32-4001 identifies the required equipment quantities for deployments. If you're deploying to an area that has only a biological threat you must still ensure the correct amount of IPE is taken. The GCE will protect personnel from a chemical or biological attack. The NBC filter canisters will protect the wearer from any particles larger than 1-1.5 micrometers.

- **PRE-ATTACK:** During this phase you'll perform all your preventive measures not already completed.

  - BASE INTELLIGENCE: They will reassess the biological threat. You must ensure you receive this new information.

  - MEDICAL: They should ensure administration of all doses of vaccines, if incomplete prior to deployment, are completed at the deployment location. Due to the time interval necessary between doses, there may have been insufficient time to administer all doses of a vaccine prior to deployment.
  - ALL UNITS: Commanders should issue periodic reminders of the need to remain observant for signs of a covert BW attack. These reminders apply to all base personnel but are particularly important for security patrols, air traffic control personnel, water treatment personnel, and personnel responsible for food storage and handling. Maintaining watch for covert BW attack is part of the larger effort to detect covert attacks of all types.

  - SANITATION: Good sanitation measures are extremely important in any environment, but even more so in a biological threat area. Frequent washings with soap and water and regular changes of clean clothing are a couple of such measures. Using disinfected field latrines and toilets, as well as hand washing after the use of toilets should also be emphasized. Bioenvironmental, Military Public Health, and CE Utilities can advise on the proper procedures.

  - COLLECTIVE PROTECTION FACILITIES*:* When you activate your shelters you'll check the collective protection facilities to ensure they're operating properly. Shelter Management Teams will perform this duty and report to your NBCCC.

- **TRANS-ATTACK:** As soon as your base goes to alarm red you'll pass on the alarm change, take cover, and assume MOPP 4 unless otherwise directed. There are no direct means to ascertain whether attacks in progress or about to occur include BW weapons. In very few, if any, cases would there be enough time between warning and occurrence of an attack to adequately consider available information and decide on the likelihood of a BW attack. Accordingly, commanders must periodically monitor intelligence assessments, situation reports, and other related information to prepare themselves to make an informed decision on whether or not to implement BW defense measures upon notification of an attack. Other important factors would include the time of day, weather conditions, mission demands, fitness level, training status, and equipment status. Your NBC monitoring teams should evaluate the attack to determine if any spray devices, or other indications of a biological attack occur.

- **POST-ATTACK:** During this phase you'll proceed with your normal after post-attack procedures. Since these post-attack procedures are standard, we'll cover only those procedures unique to biological defense here. For information on complete post-attack procedures reference AFI 10-212, Air Base Operability.

    - MEDICAL: Base medical personnel should review medical intelligence reports, monitor patient diagnoses and symptoms, and conduct epidemiological studies. Medical personnel also perform disease surveillance and report, supply and administer vaccines, antibiotics, and other drugs. Finally they will treat BW casualties, clinically analyze BW samples, and advise the commander on medical aspects of BW defense.

    - BIOENVIRONMENTAL ENGINEERING: They should perform environmental sampling and analysis. They'll also prepare and ship verification samples.

    - EOD: During their damage assessment runs they'll check the type of ordnance used. This will indicate if biological agents have been used. Keep in mind if chemical agents are used biological agents may also be present. Delivery systems for chemical and biological agents are similar, but the enemy may use different delivery systems. For instance, during the same attack the enemy may deliver chemical agents in bombs and biological agents with a spray device. You can't rely on the means of delivery as the sole indicator of the use of biological agents. Be sure to work with the EOD representative in the SRC on this matter.

NOTE:
Some protective measures take place during all three phases of attack**.**

- SECURITY FORCES: Should look for indications of BW spray attacks and contamination of food and water supplies. They should watch for spray attacks from observation posts and, during patrols, focusing on areas upwind of the base which are accessible to hostile forces for placement of operational spray systems. They should protect food and water supplies, being particularly cautious about any upwind spray activities or activities near water supplies, no matter how routine they may appear.

- ALL PERSONNEL: Should look for enemy aircraft and missile activity for unusual patterns or characteristics which might indicate the possibility of BW attacks. An example would be single aircraft passes upwind of an air base.

- NBC WARNING AND REPORTING SYSTEM (NBCWRS): You may receive reports notifying, or warning your base of biological attacks. You'll analyze and brief this information to the commander. This can also help with your bases biological defense once you know which agents have been used.

The key to determining the appropriate biological protective measure is to communicate with the other agencies on and off your base. The threat of biological agents being used in a contingency is the same, if not greater, than chemicals. For this reason you'll find more information concerning biological defense being published, such as AFJMAN 32-4009, Technical Aspects of Biological Warfare Agents. You should stay current on the new information as it comes out. Doing so will give you the knowledge to provide sound advice to your commander on these issues. This will increase the survivability for personnel and help ensure mission effectiveness.

Review Questions
for
Determine Appropriate Biological Protective Measures

Question	Answer
1. Maintaining a good health program is started in which phase?	a. Peacetime b. Deployment c. Pre-Attack d. Post-Attack
2. You should monitor for indications of biological attacks during which phase?	a. Pre-Attack b. Trans-Attack c. Post-Attack d. All of the above
3. Antibiotics would be administered during which phase?	a. Pre-Attack b. Trans-Attack c. Post-Attack d. All of the above
4. Collective Protective Facilities should be activated during which phase?	a. Pre-Attack b. Trans-Attack c. Post-Attack d. All of the above

DETERMINE APPROPRIATE BIOLOGICAL PROTECTIVE MEASURES

Performance Checklist		
Step	**Yes**	**No**
1. Did the trainee identify the types of protective measures?		
2. Did the trainee know which agencies provided needed information?		
3. Did the trainee identify when the protective measures should be implemented?		

FEEDBACK: Trainer should provide both positive and/or negative feedback to the trainee immediately after the task is performed. This will ensure the issue is still fresh in the mind of both the trainee and trainer.

MODULE 14 **AFQTP UNIT 6**

IMPLEMENT EXPOSURE CONTROL ACTIONS

(14.6.3.1.)

IMPLEMENT EXPOSURE CONTROL ACTIONS

Task Training Guide

STS Reference Number/Title:	14.6.3.1., Implement exposure control actions
Training References:	• AFMAN 32-4005 and ATP 45 chapter 8.
Prerequisites:	• Possess as a minimum a 3E931 or higher AFSC.
Equipment/Tools Required:	• RADIAC, dosimeters, and radiological control log.
Learning Objective:	• Trainee should have the knowledge to implement exposure control actions.
Samples of Behavior:	• Trainee should be able to perform all aspects of exposure control actions for a shelter. Trainee should also make recommendations to the shelter commander concerning exposure control actions.
Notes:	

IMPLEMENT EXPOSURE CONTROL ACTIONS

Background: Exposure control is designed to monitor the radiological dose that personnel receive in a nuclear fallout zone. This is normally performed by the shelter management teams (SMT). The purpose of this system is to help equalize exposure to radiation.

The SMT maintains a radiological log to record the dosage received while in the shelter and individual logs for personnel that must perform duties outside the shelter. When fallout is expected the SMT will monitor continuously until fallout arrives.

HINT:
After arrival of fallout the SMT SHOULD monitor every 15 minutes until a peak in fallout, then monitoring will occur every hour.

Inside the shelter dosimeters must be positioned throughout the shelter to identify which areas are receiving higher radiation levels. If this is occurring you may have to rotate people throughout the shelter to equalize exposure.

Keep individual records for people that must perform duties outside the shelter. Before leaving the shelter they must sign out and take a dosimeter that has been zeroed. Upon returning they must sign in and annotate the dose they received while outside. As a SMT member, it is up to you to monitor their exposure level. This may require you to limit the time spent outside depending on the level of radiation at the time.

Keep the commander informed of all the sheltered occupant's exposure levels because this will have a direct impact on decisions being made. The total accumulated dose for any person should not exceed 150 centigray. The installation commander may adjust the allowable dose to meet critical mission requirements.

These are just a few rules for exposure control actions. For more information on this area reference AFMAN 32-4005. In addition ATP 45, chapter 8 contains information on formulas to use for arrival of fallout, decay rate, transmission factor, evacuation to a contamination free area, etc. This information is essential to successful exposure control actions and to giving the commander the information necessary will need to make key decisions.

Review Questions
for
Implement Exposure Control Actions

Question	Answer
1. The total accumulated dose an individual receives should not exceed _____.	a. 100 Centigray b. 150 Centigray c. 200 Centigray d. 250 Centigray
2. When a group of individuals leave the shelter everyone must take a dosimeter.	a. True b. False
3. During fallout operations, exposure to which type of radiation poses the greatest operational threat?	a. Alpha b. Beta c. Gamma
4. Who will usually perform exposure control actions?	a. NBC Detection Teams b. Shelter Management Teams c. Readiness Flight d. NBC Control Center

IMPLEMENT EXPOSURE CONTROL ACTIONS

Performance Checklist		
Step	**Yes**	**No**
1. Give the trainee a radiological control log, dosimeters, RADIAC, and a shelter. If the equipment isn't available you can simulate it with written inputs.		
2. Did the trainee take radiation readings at the correct times? If you're using written inputs the trainee should request the readings from you.		
3. Were proper exposure control techniques used for personnel leaving the shelter?		
4. Were proper exposure control techniques used for personnel returning to the shelter?		
5. Did the trainee keep the shelter commander informed?		
6. Did the trainee make recommendations to the commander concerning exposure control?		

FEEDBACK: Trainer should provide both positive and/or negative feedback to the trainee immediately after the task is performed. This will ensure the issue is still fresh in the mind of both the trainee and trainer.

MODULE 14 **AFQTP UNIT 6**

CONDUCT CONTAMINATION CONTROL AREA (CCA) PROCEDURES

(14.6.3.3.)

Notice. This AFQTP is *NOT* intended to replace the applicable technical references nor is it intended to replace hands-on training. It is to be used in conjunction with these for training purposes only.

CONDUCT CONTAMINATION CONTROL AREA (CCA) PROCEDURES

Task Training Guide

STS Reference Number/Title:	14.6.3.3.
Training References:	• AFMAN 32-4005.
Prerequisites:	• Possess as a minimum a 3E931 or higher AFSC.
Equipment/Tools Required:	• N/A
Learning Objective:	• Trainee should understand the concept and practical application of a CCA.
Samples of Behavior:	• Trainee should be able to set up and process people through a CCA.
Notes:	

CONDUCT CONTAMINATION CONTROL AREA (CCA) PROCEDURES

Background: In a NBC environment, a CCA is vital to sustained operations. If operated properly they prevent the spread of contamination into a Toxic Free Area (TFA) so that personnel may obtain rest and relief in a clean environment. There are different types of CCAs you can use, from open air to mechanical systems attached to existing facilities the ones attached to collective protective facilities. Even though the design may be different each CCA must have an entrance, LHA, VHA, and an airlock.

- **ENTRANCE.** The entrance is the area you will remove and store your personal gear.

- **LHA:** This is the area where liquid contamination is contained. After each item of clothing is removed you will decontaminate your gloves. Remove and store your footwear covers, GCE pants, GCE jacket, and gloves. You will also perform a mask exchange prior to departing this area.

- **VHA:** Remove your combat boots, duty uniform, and glove inserts.

- **AIRLOCK:** Remove your underclothing, wait the purge time, remove exchange mask, and exit into the TFA. In an open air CCA a transition area replaces the airlock.

Normally a shelter management team will be working the CCA. You need to have an extensive knowledge of CCA operations, because you may be called upon to provide training, answer questions, or help run one in an emergency. AFMAN 32-4005 contains guidance for materials, duties, and disposition instructions needed to operate a CCA. It also contains specific information on checklist and sign requirements to be used in the CCA.

Review Questions
for
Conduct Contamination Control Area (CCA) Procedures

Question	Answer
1. What four areas must each CCA contain?	a. LHA, VHA, Airlock, and TFA b. Entrance, LHA, VHA, and TFA c. Entrance, LHA, VHA, and Airlock d. Entrance, LHA, Airlock, and TFA
2. The LHA is where you remove your chemical protective jacket, pants, and combat boots.	a. True b. False
3. In what station will you remove your mission mask?	a. LHA b. VHA c. Airlock d. TFA
4. Who will normally be responsible for operating in a CCA?	a. Readiness Flight b. Chemical Monitoring Teams c. Shelter Management Teams d. Medical Personnel

CONDUCT CONTAMINATION CONTROL AREA (CCA) PROCEDURES

Performance Checklist		
Step	**Yes**	**No**
1. Given the supplies needed. Can the Trainee setup and process personnel through a CCA.		
2. Did the trainee set up the CCA properly?		
3. Were all stations positioned in the right order?		
4. Were signs in-place?		
5. Did the trainee process personnel properly through all stations?		
6. Did the trainee stay in the assigned work area to prevent the spread of contamination?		
7. Did the trainee use checklists for each station?		

FEEDBACK: Trainer should provide both positive and/or negative feedback to the trainee immediately after the task is performed. This will ensure the issue is still fresh in the mind of both the trainee and trainer.

MODULE 14 **AFQTP UNIT 7**

EMPLOY PROTECTIVE ACTIONS

(14.7.3)

EMPLOY PROTECTIVE ACTIONS

Task Training Guide

STS Reference Number/Title:	16.7.3., Employ protective actions
Training References:	• AFMAN 32-4005; AFPAM 10-219; AFVA 32-4010 and 32-4011
Prerequisites:	• Possess as a minimum a 3E931 AFSC.
Equipment/Tools Required:	• N/A
Learning Objective:	• Trainee should understand when to employ protective actions.
Samples of Behavior:	• Trainee should be able to identify and recommend when to employ protective actions during the pre-attack, trans-attack, and post attack phases.
Notes:	

EMPLOY PROTECTIVE ACTIONS

Background: It is important to realize when to employ protective actions. This way you ensure your base is prepared at all times. Protective actions for an attack can be divided into three phases which are pre-attack, trans-attack, and post-attack.

- **PRE-ATTACK:** Most of the work will be done during this phase. Command and control centers will be activated and wartime plans will be implemented. Some of these plans to be implemented are the noncombatant evacuation, survival recovery and reconstitution, and continuity of operations. The shelter plan must be implemented or at the very least the shelters must be prepared and stocked. Disperse critical assets according to the dispersal plan. CCD should be implemented at this time as well. Additional hardening should be performed if time is available. When an attack is probable all personnel not performing mission essential tasks should report to their shelter. If a chemical threat is present there would be additional measures to implement, such as contamination avoidance and chemical monitoring.

- **TRANS-ATTACK:** When the attack is imminent or in progress seek immediate cover and don all remaining required IPE. When taking cover remember to seek cover from blast, shrapnel, and heat. If you're in a chemical threat area take cover from contamination as well.

- **POST-ATTACK:** Dispatch damage assessment teams. Hold all non-critical mission activities until hazards are assessed. Report findings on UXOs, casualties, and damage to unit control centers who will report the findings to the survival recovery center. Begin recovery operations, such as firefighting, casualty treatment, UXO safeing, rapid runway repair, and facility restoration. If a chemical threat is present we will have to wait until chemical testing is complete before we lower the protective posture. Most recovery operations will continue even in a chemical environment.

Review Questions
for
Employ Protective Actions

Question	Answer
1. During which phase will the shelter plan be implemented?	a. Pre-attack. b. Trans-attack. c. Post-attack.
2. During which phase will UXO's be reported?	a. Pre-attack. b. Trans-attack. c. Post-attack.
3. During which phase will personnel take cover?	a. Pre-attack. b. Trans-attack. c. Post-attack.
4. During which phase will you disperse your critical assets?	a. Pre-attack. b. Trans-attack. c. Post-attack.

EMPLOY PROTECTIVE ACTIONS

Performance Checklist		
Step	**Yes**	**No**
1. Give trainee a scenario that will let them progress through different phases of attack.		
2. Did the trainee implement or make the recommendation to implement the proper measures during the pre-attack phase?		
3. Did the trainee implement or make the recommendation to implement the proper measures during the trans-attack phase?		
4. Did the trainee implement or make the recommendation to implement the proper measures during the post-attack phase?		

FEEDBACK: Trainer should provide both positive and/or negative feedback to the trainee immediately after the task is performed. This will ensure the issue is still fresh in the mind of both the trainee and trainer.

MODULE 14 **AFQTP UNIT 8**

EVALUATE ADEQUACY OF LOCAL ALERTING SYSTEM

(14.8.1.)

EVALUATE ADEQUACY OF LOCAL ALERTING SYSTEM

Task Training Guide

STS Reference Number/Title:	14.8.1., Evaluate adequacy of local alerting systems
Training References:	• AFI 32-4001
Prerequisites:	• Possess as a minimum a 3E931 or higher AFSC.
Equipment/Tools Required:	• N/A
Learning Objective:	• Trainee should be able to evaluate the adequacy of the local alerting system.
Samples of Behavior:	• Trainee should be able to evaluate the adequacy of the local alerting system.
Notes:	

EVALUATE ADEQUACY OF LOCAL ALERTING SYSTEM

Background: Every Air Force installation must have a rapid and effective system for dissemination of disaster information. You will find that your base has many ways to ensure this information is disseminated. Some of these are giant voice, radios, telephones, secondary crash phone, and word of mouth. At most overseas location Armed Forces Network (AFN) will usually broadcast emergency information over their television and radio stations. One of your responsibilities is to evaluate the adequacy of the local reporting system. Some of the avenues available to you include:

- **Compatibility:** Ensure your base uses signals that are compatible with host nation, local, or theater systems.

- **Availability:** Local warning signals should be displayed in all work and rest areas. Forces deploying into your base should be briefed on them, since they might be used to different signals.

- **Testing:** The giant voice system at your base is tested everyday during retreat ceremony. You should identify which areas of the base can't hear this and ensure they have other means of receiving alert information. The secondary crash phone also performs a daily check. Most radios and telephones are also used everyday. In addition, overseas AFN will perform a test of their emergency broadcast periodically.

- **Exercises:** They serve as the best means to test your alerting system. This is the most practical time to evaluate the control centers for the base on their procedures for dissemination of information throughout the unit.

- **Deployments:** If you know where your deployment location is you can ensure the local alerting system is in place by including it in the plans. If your deployment location is unknown you will have to evaluate and brief the alerting system to your deployment team upon arrival. If you deploy to a bare base operation you will have to assist with the setup the alerting system. Make sure the alerting system follows MAJCOM or theater guidance.

Review Questions
for
Evaluate Adequacy Of Local Alerting System

Question	Answer
1. Exercises provide excellent opportunities to evaluate the local alerting system.	a. True b. False
2. Local warning signals only need to be displayed in the work center.	a. True b. False
3. What type of methods are used in the alerting system?	a. Giant voice b. Runners c. Telephone d. Both a and c e. All of the above

EVALUATE ADEQUACY OF LOCAL ALERTING SYSTEM

Performance Checklist		
Step	**Yes**	**No**
1. Did the trainee identify areas of the base that the giant voice system couldn't be heard?		
2. Did the trainee check to ensure work centers and rest areas posted local warning signals?		
3. Did the trainee check to ensure the SRC had communication lines to the control centers?		

FEEDBACK: Trainer should provide both positive and/or negative feedback to the trainee immediately after the task is performed. This will ensure the issue is still fresh in the mind of both the trainee and trainer.

MODULE 14 **AFQTP UNIT 8**

ADVISE ON USE OF WARNING SYSTEMS

(14.8.2.)

ADVISE ON USE OF WARNING SYSTEMS

Task Training Guide

STS Reference Number/Title:	14.8.2., Advise on use of warning systems
Training References:	• AFI 32-4001; AFVA 32-4011.
Prerequisites:	• Possess as a minimum a 3E931 AFSC.
Equipment/Tools Required:	• N/A
Learning Objective:	• Trainee should be able to advise on the use of warning signals.
Samples of Behavior:	• Trainee should understand when the warning signal should be changed. The trainee should be able to explain what each warning signal means and who should make recommendations to change it.
Notes:	

ADVISE ON USE OF WARNING SIGNALS

BACKGROUND: If warning signals are used improperly it can hamper our ability to perform the mission. It is your responsibility to understand when these warning signals are to be used AND PROPERLY ADVISE YOUR COMMAND. These warning signals are only for passive defense, do not use these for active ground defense. For instance: if you hear an explosion on your base and declare alarm red, everybody will take cover. If saboteurs caused the explosion they've just been given free run of the base. Always know why you are declaring a warning signal.

NOTE:
The following are the standardized alarm signals, however you must consider your host nation or local warning signals. For example Korea uses Alarm signals Green, Yellow, Blue and Black.

- **ALARM YELLOW:** This means attack is probable. The enemy must have the means and intention of attacking your base to make the recommendation to declare alarm yellow. Normally, the wing commander will make this decision based on advice given by intelligence reports. The theater commander may also make the declaration.

- **ALARM RED:** This means the attack is imminent or in progress. The Emergency Action (EA) cell will advise the wing commander when to declare alarm red. During alarm red everyone on the base takes cover.

- **ALARM BLACK:** This means the attack is over and NBC agents are expected or present. (See Figure, 1). Once the EA cell has determined that the enemy aircraft or missiles have departed our airspace they will advise the wing commander to declare alarm black. Once we are in alarm black the SRC will look to you for results of the NBC testing and EOD for the results of the damage assessment team (DAT). When all testing results prove negative you recommend alarm yellow to the SRC commander, who will in turn obtain status from EOD and make the recommendation to the wing commander.

Review Questions
for
Advise On Use Of Warning Signals

Question	Answer
1. Who is most qualified to recommend an alarm change from yellow to red?	a. Readiness b. EA Cell c. Intelligence d. Security Police
2. Who is most qualified to recommend an alarm change from red to black?	a. Readiness b. EA Cell c. Intelligence d. Security Police
3. Who is most qualified to recommend an alarm change from black to yellow?	a. Readiness b. EA Cell c. Intelligence d. Security Police
4. The warning signals are used for every attack on your base.	a. True b. False

ADVISE ON USE OF WARNING SIGNALS

Performance Checklist		
Step	**Yes**	**No**
1. Set the trainee in a scenario that progresses through the warning signals?		
2. Did the trainee know who should make the recommendation to go to alarm yellow?		
3. Did the trainee know who should make the recommendation to progress to alarm red?		
4. Did the trainee know who should make the recommendation to progress to alarm black?		
5. Did the trainee make the recommendation to go from alarm black to alarm yellow?		
6. Did the trainee have all the information available before recommending going back to alarm yellow?		

FEEDBACK: Trainer should provide both positive and/or negative feedback to the trainee immediately after the task is performed. This will ensure the issue is still fresh in the mind of both the trainee and trainer.

MODULE 14 AFQTP UNIT 9

ESTABLISH INFORMATION FLOW

(14.9.2.)

ESTABLISH INFORMATION FLOW

Task Training Guide

STS Reference Number/Title:	14.9.2., Establish information flow
Training References:	• Readiness Training Package E1.
Prerequisites:	• Possess as a minimum a 3E931 AFSC.
Equipment/Tools Required:	• N/A
Learning Objective:	• Trainee should be able to identify the communication chain and potential problem areas in the chain.
Samples of Behavior:	• Trainee should be able to perform in a general control center operation using the communication chain and correcting any problems, if possible, that occur in the chain.
Notes:	

ESTABLISH INFORMATION FLOW

Background: The flow of information is vital to any contingency. During any control center operation information flows up and down. Think about your flow of information. How many links are in that communication chain? Each link in that chain is an opportunity for information to become lost or for misinformation to creep in. Let's take a look at some information that will flow through the survival recovery center (SRC) and unit control centers (UCC).

- **Communications:** The SRC is responsible for determining the scope of the damage and its impact on the base's missions. SRC members must disseminate information to and collect information from, UCCs and shelters. Inputs come into the SRC from control centers or from individual reports.
- **Information Flow:** The SRC has several simultaneous requirements to communicate information and decisions. Communications may include checklists to activate, resources needed, directions to evacuate or take cover, and accomplishment of specific actions associated with states and stages of alert.
- **Upward Flow:** Upward flow of information starts with the individual and goes through the UCC to the SRC. The SRC must also communicate with MAJCOM or theater through the wing commander to report any critical shortages or incidents that affect the mission capability of the installation.
- **Downward Flow:** The SRC must inform UCCs of the situation when it changes. This includes alert stages, threats, or attack information.
- **Duplication of information:** Because of the levels of input, multitude of sources, and quantities of information channeled through the SRC, reports are inevitably duplicated. The SRC staff needs to coordinate and consolidate all inputs to eliminate duplications.
- **Individual Reports:** These reports are unplanned and uncontrolled. Expect individuals to call in when they have damage, fire, lose power etc. Individual reports create the potential for chaos by having lower priority problems choking your lines of communication.
- **Observation Posts:** Observation post are personnel that are dispersed throughout your reporting area who can immediately report on post-attack conditions and damage in their immediate area. Some examples are: security police ground defense positions and aircraft control tower.

- **Organized Reports:** By far the best way for information to flow is through organized reports. During contingencies, the SRC receives reports from several sources. Messages and status updates arrive from headquarters and other installations. Organized reports usually originate from base personnel or designated teams. The reports are funneled to UCCs and passed to the SRC. The advantage of an organized report is that you can quickly get a damage assessment of the entire base. This reduces multiple reports and provides a better system to prioritize damage.
  Organized reports should contain the following: Casualties, Fires, Facility/utility damage, presence of NBC agents, airfield damage, UXOs, indication of impact to mission. Due to the number of incoming reports you will have to prioritize communications. Ensure the teams are aware of the priority of their team and they adhere to it.

Review Questions
for
Establish Information Flow

Question	Answer
1. Individual reports are the best way for a control center to gather information.	a. True b. False
2. What should organized reports contain?	a. Casualties b. Facility damage c. UXO d. All of the above
3. UCC passing on the alarm condition change, is an example of?	a. Upward flow of information b. Downward flow of information c. Duplication of information
4. Individuals reporting a UXO to the UCC, is an example of?	a. Upward flow of information b. Downward flow of information c. Duplication of information

ESTABLISH INFORMATION FLOW

Performance Checklist		
Step	**Yes**	**No**
1. Set the trainee in a control center environment.		
2. Did the trainee know what information is required for the position?		
3. Did the trainee identify who was in the upward communication chain?		
4. Did the trainee identify who was in the downward communication chain?		
5. Did the trainee communicate with everybody in the communication chain?		
6. Did the trainee coordinate and consolidate all inputs to eliminate duplication?		

FEEDBACK: Trainer should provide both positive and/or negative feedback to the trainee immediately after the task is performed. This will ensure the issue is still fresh in the mind of both the trainee and trainer.

MODULE 14 AFQTP UNIT 9

DIRECT ACTIVATION OF SPECIALIZED TEAMS

(14.9.3.)

DIRECT ACTIVATION OF SPECIALIZED TEAMS

Task Training Guide

STS Reference Number/Title:	14.9.3., Direct activation of specialized teams
Training References:	• Readiness Flight CONOPS. • AFI 10-212, *Air Base Operability.* • AFI 32-4001, *Disaster Preparedness Planning and Operation.* • AFMAN 32-4005, *Personnel Protection and Attack Actions.*
Prerequisites:	• Possess as a minimum a 3E931 AFSC.
Equipment/Tools Required:	• N/A
Learning Objective:	• Trainee should be able to understand when to direct the activation of the specialized teams.
Samples of Behavior:	• Trainee should identify when to activate the specialized teams to complete a particular objective.
Notes:	

DIRECT ACTIVATION OF SPECIALIZED TEAMS

BACKGROUND: One of the duties of the Readiness Flight is directing the activation of specialized teams. It is important to understand when this should occur so we don't hamper mission effectiveness or waste valuable manpower. Just as important as understanding when to activate these teams is realizing when to deactivate, or place them in a standby status. The teams you'll normally be responsible to activate are NBC Monitoring Teams, Shelter Management Teams, and Contamination Control Teams. Let's take a look at these teams and the events that would dictate their activation.

- **NBC Monitoring/Reconnaissance Teams**: This team is activated in the pre-attack phase. During this phase they establish their monitoring route and detection array. They ensure all their equipment is available and operational. Their staging or dispersal area must also be prepared. Once these items are accomplished they may be placed in standby status, depending on the threat they may be used in another capacity. When in standby status you should keep these teams together and in the communication chain in case you have to reactivate them on short notice.

- **Shelter Management Teams (SMT):** These teams are activated during the pre-attack phase. They prepare their shelters for operation by ensuring measures which were planned for are implemented, for example; shelter stocking, hardening, exposure control procedures, and CCA procedures. For more information on SMTs reference AFI 32-4005.

- **Contamination Control Teams**: Like our other teams, this team is activated during the pre-attack phase. They ensure the equipment and supplies they need are on hand and serviceable. Their dispersal or staging area must also be prepared. They can then be placed in standby status until they're needed. Unlike the other two teams, Contamination Control Teams normally report to their Unit Control Center (UCC). You direct their activation through the UCCs.

Review Questions
for
Direct Activation Of Specialized Teams

Question	Answer
1. Which teams are you responsible to activate?	a. NBC Monitoring Teams b. Shelter Management Teams c. Contamination Control Teams d. All of the above
2. Which team would you activate to check their exposure control procedures?	a. NBC Monitoring Teams b. Shelter Management Teams c. Contamination Control Teams d. All of the above
3. Which team would you activate to practice running their routes?	a. NBC Monitoring Teams b. Shelter Management Teams c. Contamination Control Teams d. All of the above
4. Which team would you activate to check their equipment?	a. NBC Monitoring Teams b. Shelter Management Teams c. Contamination Control Teams d. Both a and c e. All of the above

DIRECT ACTIVATION OF SPECIALIZED TEAMS

Performance Checklist		
Step	**Yes**	**No**
1. Set the trainee in a control center environment.		
2. Did the trainee know which specialized teams to activate?		
3. Did the trainee activate a particular team when necessary?		
4. Did the trainee ensure the team completed the assigned task?		
5. Did the trainee deactivate or place the team in standby status when possible?		

FEEDBACK: Trainer should provide both positive and/or negative feedback to the trainee immediately after the task is performed. This will ensure the issue is still fresh in the mind of both the trainee and trainer.

MODULE 14 **AFQTP UNIT 9**

MONITOR AND DIRECT READINESS OF NBC FORCES

(14.9.4.)

MONITOR AND DIRECT READINESS OF NBC FORCES

Task Training Guide

STS Reference Number/Title:	14.9.4., Monitor and direct readiness of NBC forces
Training References:	• Readiness Flight CONOPS. • AFI 10-212, *Air Base Operability.* • AFI 32-4001, *Disaster Preparedness Planning and Operation.* • AFMAN 32-4005, *Personnel Protection and Attack Actions.* • RTP E1, *Survival Recovery Center Operations.* • QTP 14.9.3., *Direct Activation of Specialized Teams.*
Prerequisites:	• Possess as a minimum a 3E931 AFSC.
Equipment/Tools Required:	• N/A
Learning Objective:	• Trainee should understand how to monitor and direct the NBC forces for the base.
Samples of Behavior:	• Trainee should be able to identify the NBC forces and know how to monitor them, and what to direct them to do.
Notes:	

MONITOR AND DIRECT READINESS OF NBC FORCES

Background: In order to help your base minimize the loss of operational capability you must ensure all NBC forces are ready. The control center, SRC or NBCCC, is the place where you will monitor and direct all of your NBC forces. Lets take a look at the teams and functions you will be monitoring.

- **SRC:** The NBC position here is occupied by the Readiness Flight officer or senior NCO. This job mainly consists of advising and coordinating on NBC issues. For a detailed list of these issues reference the Readiness Flight CONOPS. The first preparation to perform in the SRC is ensuring the lines of communication are in place. You must be able to receive information from your teams as quickly as possible. Once you receive this information you must analyze it and give your advice to the correct person or coordinate with the proper agency. Understandably the SRC can get pretty chaotic at times, during these times you can't assume the other personnel working in there know what information you provide to them. Every unit on your base is represented in either the SRC or Wing Operation Center (WOC). Part of your preparation is ensuring all representatives are aware of the information you provide and the information you need from them. By making this clear, you will decrease the time it takes for you to receive information and help control the chaos in the SRC.

- **NBCCC:** This position should be composed of three Readiness personnel with at least one person being 3E971 or a 3E991. This job consists of directing and monitoring the specialized teams and running the NBC Warning and Reporting System (NBCWRS). The Readiness Flight CONOPS lists these responsibilities. To prepare the NBCCC you must ensure the lines of communication with your specialized teams and all UCCs exist. Since these teams are not located with you, comm out procedures will also be needed. You must also ensure you have communication procedures with each agency, both on and off base, in your NBCWRS. You must make sure your cell has administrative supplies, base grid maps, UTM maps, plotting aids, etc. You will also need to ensure all other NBC forces are equipped and ready. We'll discuss these requirements in the following paragraphs, but remember, it's the responsibility of the NBCCC to ensure they are completed.

- **NBC Monitoring Teams:** Depending on the personnel available, you should have at least one Readiness person per team. You can fill the team with a couple of trained augmentees. The number of teams depends on the size and layout of your base. Your damage assessment route is a major item in the preparation of this team. Although the NBCCC will probably select both the primary and alternate routes, it is vital that your team is in on the planning process. During this planning process you will also decide where to establish your dispersal area and where, along your route, to position your detection and warning equipment. Keep in mind that you will probably be working at a deployment location, so you will want to practice running your routes both at day and night. Part of your duties includes evaluating attacks to determine attack patterns, probable targets, and effectiveness of passive defense measures. To be prepared for this task you need a briefing on likely attack profiles, probable enemy targeting priorities, and location of all passive defense measures. Another job you may be tasked with is assisting other specialized teams, so you will have to be familiar with their location and operating procedures. Once again, the NBCCC will direct or assist you in all your preparations, but you must stay involved in

these preparations so you will understand what is expected of you when you're performing these tasks.

- **Shelter/CCA Teams:** These teams normally consist of people from the unit owning the shelter, or in the case of CCA Teams, augmentees. These teams are trained specifically for this job. If they have not received training, you would have to accomplish that as part of the preparations. The NBCCC directs and monitors these teams. You must ensure lines of communication are established between the two.. For the shelter teams in particular, the unit is responsible for the equipment and supplies needed to perform shelter operations. The NBCCC still monitors them to ensure they have this equipment. In addition, you will have to make sure the procedures for operating the shelter are correct. For guidance on shelter operations reference AFMAN 32-4005. You will probably be responsible for supplying the equipment for any open air CCA team not associated with a shelter. You will also have to have a staging or dispersal area designated for them. If you use an open air CCA, the team will require a vehicle to transport their supplies and equipment to the area you chose for their operation. You must provide open air CCA teams with detection equipment and a communication link, and also establish procedures for them to report findings after an attack. AFMAN 32-4005 contains additional information. The NBCCC relies heavily on information these teams provide concerning detection and identification of contamination. The Readiness Flight provides equipment and training for these procedures.

- **CCT:** The UCC controls these teams. To ensure these forces are ready you must make sure they have been trained and verify they have all their equipment. You must check with each supporting UCC to make sure their communication line and understanding of how to employ the CCT exists. The NBCCC may be tasked to assist these teams with technical guidance, so the NBCCC needs to ensure the NBC monitoring teams are aware of their locations. If you wish to use these teams as part of the detection and identification system for the base, you must ensure they have enough equipment to accomplish this task.

- **Other Teams:** You may find it possible to incorporate other teams into your bases' detection and identification system. Some examples are security forces, anti-aircraft attack (AAA) batteries, and damage assessment teams. Based on the threat or their mission these teams may not be able to support this. You must equip and train any team that can support the detection and identification system. You also need to establish the communication chain from these teams or their UCC to your NBCCC.

- **Base Populace:** Ensure the base populace is equipped with individual protection equipment (IPE). This is accomplished by Supply or each unit. Ensure the people know the communication chain for post-attack reporting. Base populace training is an excellent forum to address these procedures.

If all these actions are accomplished by your NBC forces you should receive all the information you would need to make sound decisions or recommendations. Only by being prepared at all levels can we hope to minimize the loss of operational capability during any contingency.

Review Questions
for
Monitor And Direct Readiness Of NBC Forces

Question	Answer
1. From which control center will you monitor and direct the readiness of NBC forces?	a. SRC b. NBCCC c. Both of the above d. None of the above
2. The sole responsibility of the NBCCC is the NBC Warning and Reporting System (NBCWRS).	a. True b. False
3. Who provides detection equipment to open air CCA teams?	a. Unit Commander b. Readiness Flight c. Logistics d. SRC
4. Who controls the CCT?	a. UCC b. NBCCC c. SRC d. WOC

MONITOR AND DIRECT READINESS OF NBC FORCES

Performance Checklist		
Step	**Yes**	**No**
1. Set the trainee in a control center environment.		
2. Did the trainee know all the teams included in the NBC forces?		
3. Did the trainee know the duties of all these teams?		
4. Did the trainee establish communications with each team?		
5. Did the trainee direct teams to perform certain tasks at the appropriate time?		
6. If teams needed assistance, did the trainee identify the correct agency to provide assistance?		
7. Did the trainee monitor and direct all teams during the exercise?		

FEEDBACK: Trainer should provide both positive and/or negative feedback to the trainee immediately after the task is performed. This will ensure the issue is still fresh in the mind of both the trainee and trainer.

MODULE 14 **AFQTP UNIT 9**

MONITOR PASSIVE DEFENSE MEASURES

(14.9.5.)

MONITOR PASSIVE DEFENSE MEASURES

Task Training Guide

STS Reference Number/Title:	14.9.5., Monitor passive defense measures
Training References:	• AFI 10-212, *Air Base Operability.* • AFPAM 10-219 Vol. II, *Pre-Attack and Pre-Disaster Operations.* • AFMAN 10-401, *Operation Plan and Concert Plan Development and Implementation.* • AFI 32-4001, *Disaster Preparedness Planning and Operation.* • AFMAN 32-4005, *Personnel Protection and Attack Actions.* • RTP K1, *Camouflage, Concealment, and Deception (CCD) Program.* • RTP K7, *Tonedown and Blackout Operations.* • QTP 14.11.2.2., *Assess CCD Requirements.*
Prerequisites:	• Possess as a minimum a 3E931 AFSC.
Equipment/Tools Required:	• N/A
Learning Objective:	• Trainee should be able to identify the definition of passive defense and what to monitor for.
Samples of Behavior:	• Trainee should be able to monitor the passive defense measures and make recommendations to improve them.
Notes:	

MONITOR PASSIVE DEFENSE MEASURES

Background: Measures taken without engaging enemy forces to reduce the probability of and to minimize the effects of damage caused by hostile action are called passive defense. One of your roles in the NBCCC is to monitor passive defense measures for the base. This job actually begins during the planning process. Your plans must be written to support passive defense measures based on the current threat. Once these plans are implemented it is your responsibility to make sure they're being implemented in a proper and timely manner. Let's take a look at the passive defense measures and your role in monitoring them.

- **CCD:** This plan takes a lot of coordination with all units. There are many different types of CCD measures to use. You must make sure the measures used are the most advantageous to your current threat. You must monitor the implementation of the CCD plan ensuring all units are using the proper measures. After attacks monitor the effectiveness of CCD measures and make suggestions to take advantage of your successful measures. For more information on CCD measures reference AFI 32-4007.

- **Hardening:** Balance the level of hardening with the type of protection needed. Use the threat to determine the type of protection you need. One type of hardening is new construction. As the name implies this is when you integrate a higher protection level during new construction. This will probably not come into play in a hostile environment. Revetments are another way to provide hardening to facilities. Expedient methods are yet another, some examples are sandbags, earth berms, or steel drums filled with earth. When choosing the type of expedient method you will have to use what's available. Once again, after an attack you can improve your hardening by using what was effective before. For more information reference AFPAM 10-219, Vol. II.

- **Dispersal:** Each unit disperses key assets to protect them from enemy attack. When these assets are dispersed, mark their location on a control center map. You must have at least two routes to each dispersal site. You must also ensure dispersed assets are not placed in an unsecured area.

- **Blackout:** Every unit is responsible for blackout procedures for their resources. A good way to monitor this measure is to perform a blackout exercise for the base to determine which areas need improvement. Although the unit is responsible for obtaining the supplies to perform this measure, they may come to you for assistance in application.

- **NBC Defense:** It is vital the people on your base know which actions to take in a contaminated environment. This is accomplished in the NBC warfare defense class. You can use this forum to identify items or procedures particular to your base.

Remember, it isn't your responsibility to actually do all these jobs. It is your job to monitor the progress and provide assistance when needed.

Review Questions
for
Monitor Passive Defense Measures

Question	Answer
1. Ensuring key assets are relocated is an example of?	a. CCD b. Hardening c. Dispersal d. NBC Defense
2. When using the hardening method you should always use the strongest measure available.	a. True b. False
3. When does your job with passive defense measures begin?	a. Planning process b. Pre-Attack c. Trans-Attack d. Post-Attack
4. When do you monitor the effectiveness of passive defense measures?	a. Planning process b. Pre-Attack c. Post-Attack

MONITOR PASSIVE DEFENSE MEASURES

Performance Checklist		
Step	**Yes**	**No**
1. Set the trainee in a control center environment.		
2. Did the trainee identify the passive defense measures to monitor?		
3. Did the trainee verify the passive defense measures being used with the plans?		
4. Did the trainee identify who was responsible to complete the passive defense measures?		
5. Was the trainee aware when the passive defense measures were complete?		
6. Did the trainee monitor post-attack reports to gather information about passive defense measures?		

FEEDBACK: Trainer should provide both positive and/or negative feedback to the trainee immediately after the task is performed. This will ensure the issue is still fresh in the mind of both the trainee and trainer.

MODULE 14 **AFQTP UNIT 9**

DIRECT MONITORING TEAM ACTIONS

(14.9.7.)

DIRECT MONITORING TEAM ACTIONS

Task Training Guide

STS Reference Number/Title:	14.9.7., Direct monitoring team actions
Training References:	• Readiness Flight CONOPS. • AFI 10-212, *Air Base Operability.* • AFI 32-4001, *Disaster Preparedness Planning and Operation.* • AFMAN 32-4005, *Personnel Protection and Attack Actions.* • RTP E1, *Survival Recovery Center Operations.* • QTP 14.9.3., *Direct Activation of Specialized Teams.* • TO 11H2-14-5-1, *M8 Paper.* • TO 11H2-2-21, *M9 Paper.* • TO 11H2-22-1, *Automatic Liquid Agent Detector (ALAD).* • TO 11H2-21-2, *M256A1 Chemical Agent Detector Kit.* • TO 11H2-17-1, *M8A1 Automatic Chemical Agent Alarm.* • TO 11H2-20-1, *Chemical Agent Monitor (CAM).*
Prerequisites:	• Possess as a minimum a 3E931 AFSC.
Equipment/Tools Required:	• N/A
Learning Objective:	• Trainee should be able to identify the types of monitoring teams and their detection equipment.
Samples of Behavior:	• Trainee should be able to direct monitoring teams and identify the detection equipment needed to locate contaminated areas on a base.
Notes:	

DIRECT MONITORING TEAM ACTIONS

BACKGROUND: When Intelligence information indicates the enemy has the ability and willingness to use chemical warfare agents, our ability to detect and identify these agents becomes critical. Under normal conditions the NBCCC will direct monitoring team actions. Although the NBC monitoring team is probably what comes to mind first when you hear monitoring teams, you must also prepare to direct monitoring actions for the rest of the base. You will have shelter teams, contamination control teams, UCCs, damage assessment teams, and members from the base populace to perform monitoring actions. All these other sources help you to quickly obtain a much larger idea of the degree of contaminated areas on your base. You will direct the monitoring teams during three different phases.

PRE-ATTACK (Alarm Yellow): During this phase you will have your monitoring teams prepare for an attack. Naturally, the more your teams can accomplish in this phase directly affects the amount of and speed in which you'll receive monitoring results. Let's take a look at some of the detection equipment that your monitoring teams will use.

- **Chemical Agent Liquid Detectors**: It is vital for you to determine if your base has liquid contamination. If your base has liquid contamination you must be able to locate these contaminated areas so they can avoided or decontaminated. The following means of liquid detection are available for most deployed units:

- M8 and M9 Chemical Agent Detection Paper, TOs 11H2-14-5-1 and 11H2-2-21: This is the most widely used chemical agent detector. This paper will detect liquid nerve and blister agents. Mark the date and time (in indelible ink) on the paper when it's placed on or around buildings, vehicles, and equipment. Don't handle M8 or M9 Paper without wearing gloves. On buildings place M8 and M9 paper horizontally out in the open away from overhead cover. On vehicles, tape M8 or stick M9 Paper to vehicle surface. When MOPP-2 is declared everyone must place M9 Paper on their chemical ensembles according to TO 14P3-1-141(Groundcrew Chemical Defense Ensemble). See Figure 1.

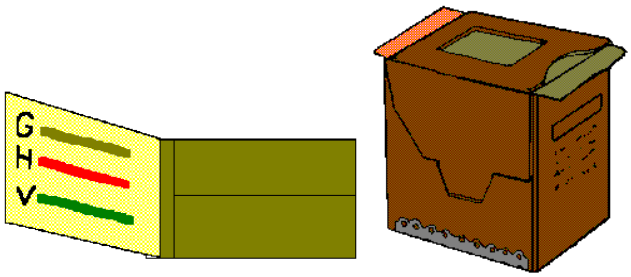


Figure 1, M8 and M9 Chemical Agent Detection Paper

- **Automatic Liquid Agent Detector** (ALAD), TO 11H2-22-1: The ALAD detects liquid nerve and blister agents. It is a point detection system and can be used as a remote sensor when attached to an alarm unit. Normally you'll have these positioned along your NBC monitoring team's route. Depending upon your resources you may also place these in the care of your shelter teams or UCCs so they can position them around their facilities. The auxiliary alarm units work well in high noise areas with these detectors.
- **Chemical Agent Vapor Detectors**: In addition to liquid agent detection, it's imperative that an effective vapor detection capability exists for your base. The following means of vapor detection are available for most deployed units:

- **M256A1 Chemical Agent Detection Kit:** TO 11H2-21-1: This kit will detect vapor nerve, blister, and blood agents. In addition to supplying these to your NBC monitoring teams, you can train your shelter, contamination control, and open air CCA teams to run these tests. To receive an even greater sampling capability for the base, you may train other units to run these tests as well and report the results to their control centers. Although this kit appears easy to perform, it is critical that you follow TO procedures. See Figure 2.

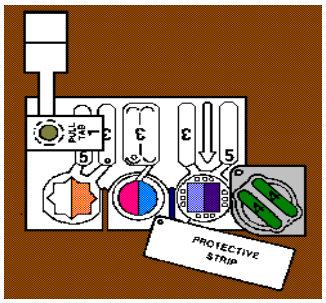


Figure 2, M256A1 Chemical Agent Detection Kit

- **M8A1 Chemical Agent Alarm**: TO 11H2-17-1: The M8A1 alarm detects nerve agent vapors and immediately sounds an alarm. Use it as a point sensor or as a remote system when attached to an M42 alarm unit. When you direct them, your monitoring teams will assemble, operationally check, and position the M8A1 alarms. This detector should be positioned around the perimeter upwind of the base. See Figure 3.

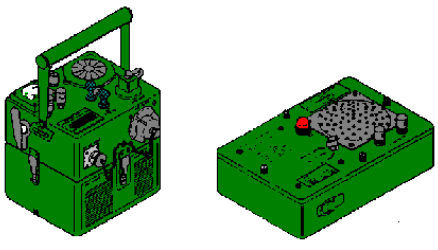


Figure 3, M8A1 Chemical Agent Alarm

- **M90 Chemical Warfare Agent Detector**: This is a stand-alone, point source vapor detector capable of identifying and quantifying the presence of blister as well as G and V nerve agents. Upon detecting these agents, the M90 sounds a local audible alarm, provides a visual alarm, and measures the concentration of the agent present. Use the M90 with the M90-RH1 alarm unit to provide a remote alarm capability. This detector, like the M8A1, should be positioned around the perimeter upwind of the base. See Figure 4.

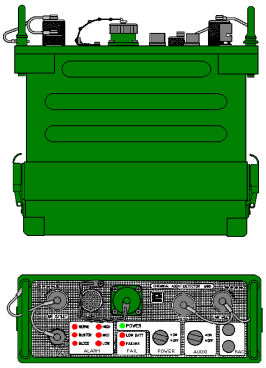


Figure 4, M90 Chemical Warfare Agent Detector

- **M-22 Automatic Chemical Agent Detector Alarm (ACADA):** The M-22 is an advanced chemical agent detector which can detect, identify, and provide a relative measurement of vesicants and nerve agents at a given point. The M-22 functions as both a fixed detector and a point source monitor. The M-22 augments nuclear, biological, and chemical reconnaissance systems and stand-off detection systems when available or serves as a warning system by itself. (i.e. when used by units deployed to off-base locations). The M-22 may be used to monitor the chemical integrity of collective protection systems or contamination control areas (CCAs) and toxic free areas (TFAs). It can also be used in the chemical reconnaissance role and the decontamination need/verification role. The ACADA Concept of Operations (CONOPS) and T.O. 11H2-23-1 (in development) is used to effectively maintain, operate, and store the unit.

- **Chemical Agent Monitor (CAM):** TO 11H2-20-1: The CAM responds to mustard and nerve agent vapors. This instrument is a point monitor used to measure levels of concentration. Teams processing personnel through a CCA use the CAM to check levels of chemical contamination. The NBC monitoring teams will also have the CAM to check particular areas or items.

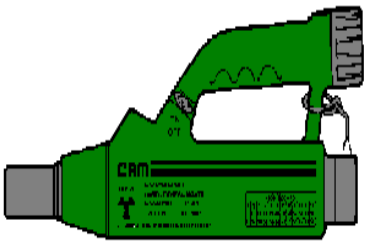


Figure 5, Chemical Agent Monitor

TRANS-ATTACK (Alarm Red): Ensure your teams take immediate cover and assume MOPP-4. Your teams should try to observe the enemy's attack tactics. Watch for chemical munitions employment, listen for low-order detonations, M8A1 and M90 alarm detection's, and observe the M9 Paper attached to ensembles for positive chemical indicators. Perform frequent buddy checks and remain under cover until alarm black is declared.

POST-ATTACK (Alarm Black): Post-attack inspection and damage reporting must be accomplished as quickly as possible. You perform post-attack recovery in two phases—quick looks and detailed assessments. Perform post-attack inspections in the following manner:

- **Quick-look inspections:** Quick-look inspections are performed as soon as possible once condition black is declared. All quick-look inspections are up-channeled to the SRC through their units UCC. However, all teams controlled by you will report their findings to the NBCCC. Don't just report positive indications, but also report negative indications so the decision makers know when all areas are complete. Everyone must check their individual M9 Paper and immediately report any positive indications to the SRC.

- Shelter occupants must check in and around their buildings to assess structural damage, observe pre-positioned M8/M9 Paper or other chemical detectors, locate UXOs, and identify damaged vehicles, equipment, and casualties. Shelter occupants or managers must also perform collective protection shelter visual inspections to validate shelter integrity. When shelter integrity visual inspections are complete, shelter managers must perform chemical detection tests within the TFA portions of their shelters.

- All monitoring teams equipped with M256A1 kits must perform chemical agent vapor tests and report the results to the SRC upon completion. They must also report visual observations to the SRC. This includes initial runway/taxiway and structural damage, craters, chemical test results, UXO estimates, casualty reports, and any other significant observations.

- **Detailed Assessment**: Although quick-look assessments provide rapid feedback to SRC planners, they're generally rather sketchy, incomplete, and may not accurately depict the details that our planners need to know to make highly critical informed decisions. Therefore, a detailed assessment must be accomplished following each attack. There are several teams tasked to perform detailed damage assessment for the base. Your NBC monitoring team is one of these. Their route of travel is already known by the NBCCC. When the alarm condition changes to black they should start their route automatically. They will check the detectors they have placed along their route and report the findings back to you. This information, along with the information you received from shelter, contamination control, base populace through the UCCs, and any other teams performing monitoring operations, should give you a detailed picture of contaminated locations at your base. If you need additional information on a certain area, you can send your NBC monitoring teams after they have completed their routes. There are other teams that perform detailed assessments of the base but don't provide chemical monitoring. You can still receive valuable information from these teams. One example is the Airfield Damage Assessment Team (ADAT). They will advise the SRC if they find any chemical UXOs.

- Decontamination teams will respond to taskings based on priorities established by SRC and their unit control center. They must check for and assess the extent of contamination then perform expedient decontamination. When finished, the team must again retest for contamination. If contamination is still present, decontaminate again until the contamination is no longer detectable on M8/M9 Paper or the CAM. When there's no contamination detected, call the unit control center, report that decontamination is complete, and await further instructions.

- When chemical monitoring test results (inside collective protection shelters, outdoors, or both) no longer show that chemical vapors are present, the Support Group Commander, based upon recommendation from the NBCCC supervisor, should request permission to change alarm level from the WOC. UXO safing teams must safe chemical UXOs before the Support Group Commander may recommend MOPP-2.

Review Questions
for
Direct Monitoring Team Actions

Question	Answer
1. Which instrument detects liquid nerve and blister?	a. M8A1 Alarm b. ALAD c. CAM d. M256A1
2. Which instrument detects vapor nerve and blister?	a. M8A1 Alarm b. ALAD c. CAM d. M8 Paper
3. During alarm red you should _____ .	a. Take cover and assume MOPP 4 b. Listen for low order detonations c. Observe enemy attacks d. All of the above
4. Which of these would perform detailed damage assessment for the base?	a. Base Populace b. NBC Monitoring Team c. Shelter Management Team d. UCC
5. The CCA team has requested help to decontaminate their area. Which team would you send to assist them?	a. NBC Monitoring Team b. Shelter Management Team c. Contamination Control Team d. Another CCA Team
6. The Contamination Control Team has requested assistance for a particular problem of a technical nature. Which team would you send to assist them?	a. NBC Monitoring Team b. Shelter Management Team c. Another Contamination Control Team d. CCA Team

DIRECT MONITORING TEAM ACTIONS

Performance Checklist		
Step	**Yes**	**No**
1. Set the trainee in a control center environment.		
2. Did the trainee know what information is required for the position?		
3. Did the trainee identify the monitoring teams?		
4. Did the trainee identify the detection equipment to be used by the monitoring teams?		
5. Did the trainee direct the teams at each alarm condition change?		
6. Did the trainee ensure the taskings were complete and if needed redirect these teams to other areas to obtain a better picture of contaminated areas of the base?		

FEEDBACK: Trainer should provide both positive and/or negative feedback to the trainee immediately after the task is performed. This will ensure the issue is still fresh in the mind of both the trainee and trainer.

MODULE 14 AFQTP UNIT 9

RECEIVE AND CONSOLIDATE REPORTS

(14.9.8.)

RECEIVE AND CONSOLIDATE REPORTS

Task Training Guide

STS Reference Number/Title:	14.9.8., Receive and consolidate reports
Training References:	• Readiness Flight CONOPS. • AFI 10-212, *Air Base Operability.* • RTP E1, *Survival Recovery Center Operations.* • QTP 14.9.15., *Interpret NBC Reports.*
Prerequisites:	• Possess a 3E931 or higher AFSC.
Equipment/Tools Required:	• N/A
Learning Objective:	• Trainee should be able to identify the types of reports the NBCCC will receive.
Samples of Behavior:	• Trainee should be able to analyze and consolidate reports as they come in to the NBCCC.
Notes:	

RECEIVE AND CONSOLIDATE REPORTS

Backgound: Your NBCCC will receive many reports from single sources, such as NBC monitoring teams, shelter teams, contamination control teams, etc. You'll also receive consolidated reports from UCCs. You'll receive reports from off base agencies as well. You can't just pass these reports on as is. You must analyze and consolidate them so you can present a clear picture of the effect they have on your base. Let's define this term. Webster defines consolidate as to bring together into a single whole. For Readiness purposes what we must do is analyze the information received, take the pertinent data, compile it into concise reports and forward that information to the appropriate agencies. For instance, after an attack SMTs will call in with the status of the shelters, integrity, the monitoring results, etc. You can't pass on the reports from each shelter so you must take all similar information and put it into one report. Here's an example of what a form might look like.

Base Shelter Status Report							
Bldg. #	**Date/Time**	**Casualties**	**Integrity**	**Overpressure**	**UXO**	**M8/M9**	**M256A1**
419	22 May 0922	0	Yes	Yes	1	Red M8	Purple Square
422	22 May 0920	3	No	No	2	Red M8	Purple Square
324	22 May 0925	0	Yes	No	0	Red M8	Purple Square
253	22 May 0918	2	Yes	Yes	2	Red M8	Purple Square
Total	**22 May 0930**	**5**	**1 With No Integrity**	**2 With No Overpressure**	**5**	**All Red M8**	**All Purple Square**

Figure 1, Base Shelter Status Report

This form is just a sample, but as you can see, you would record the information as it came in from each shelter and combine the results. You can then brief this information or annotate the status board for the SRC depending on the procedures at your base. Let's take a look at the type of reports you'll receive in the NBCCC.

- **Status Reports:** The NBCCC monitors the specialized teams. You'll have to report on the status of these teams. As you receive these reports from the members of each team consolidate them into one report per team. For example, the shelter teams provide you with their status, as you receive this information you will consolidate it into one report for all shelter teams. By doing this you can identify common problems making it easier to provide possible solutions.

- **Damage Assessment Reports:** These are reports you'll receive after an attack on your base. By consolidating these reports you'll have a better picture of the overall effect the attack had on your base. As with the status reports, you'll receive these damage assessment reports from your specialized teams and UCCs.

- **NBC Reports:** These are standard reports for use in the NBCWRS. There are six different types of NBC reports, titled NBC 1 through NBC 6, that we use in the NBCCC. The first three are the ones you're most likely to use in a NBCCC. We'll briefly cover those three here. All six reports are covered in detail in QTP 14.9.15., *Interpret NBC Reports.*

    - NBC 1 Report: This is an observer's report giving basic data concerning a NBC attack. If an attack occurs off base you may receive more than one of these reports. You must analyze and consolidate these reports to determine if there was more than one attack and what effect it has on your base or the surrounding area.

    - NBC 2 Report: This report is used to pass on evaluated data concerning the NBC strike. If you receive these reports you must analyze and consolidate them to determine if there is a threat to your base or any units attached to your base. NBC 2 is a consolidation of evaluated NBC 1 reports. Normally forwarded up channel or laterally.

    - NBC 3 Report: This is a warning report for a NBC strike. If you receive this report it means your base is in the downwind hazard area. It's possible you may receive two or more of these reports. These multiple reports may be from multiple strikes. You must analyze and consolidate these to determine the threat to your base and any units attached to your base.

The key to successful communications in your NBCCC is the information flow. By consolidating your reports as you receive them you'll reduce the flow of repetitive information and have a better picture of the status information, damage assessment, or threat that impacts your base.

Review Questions
for
Receive And Consolidate Reports

Question	Answer
1. The reports you receive before an attack are.	a. Status Reports. b. Damage Assessment Reports. c. NBC Reports. d. All of the above
2. The specialized teams reports should always be consolidated before they are sent to the NBCCC.	a. True b. False
3. Which report is used to pass evaluated data on a NBC strike?	a. NBC 1 b. NBC 2 c. NBC 3 d. NBC 4
4. Which report is used to warn agencies that they are in a NBC hazard area?	a. NBC 1 b. NBC 2 c. NBC 3 d. NBC 4
5. Why should reports be consolidated?	Written Answer

RECEIVE AND CONSOLIDATE REPORTS

Performance Checklist		
Step	**Yes**	**No**
1. Set the trainee in a control center environment.		
2. Did the trainee identify the type of reports they should receive?		
3. Did the trainee analyze the reports as they came in to the NBCCC?		
4. Did the trainee coordinate and consolidate all inputs to eliminate duplication?		

FEEDBACK: Trainer should provide both positive and/or negative feedback to the trainee immediately after the task is performed. This will ensure the issue is still fresh in the mind of both the trainee and trainer.

MODULE 14 **AFQTP UNIT 9**

READ MAPS/USE LOCATION REFERENCE MATERIALS

(14.9.9.)

READ MAPS/LOCATION REFERENCE MATERIALS

Task Training Guide

STS Reference Number/Title:	14.9.9., Read maps/location reference materials
Training References:	• RTP E8, *Finding and Plotting Locations on a Map.*
Prerequisites:	• Possess as a minimum a 3E931 or higher AFSC.
Equipment/Tools Required:	• Base grid map, Universal Transverse Mercator (UTM) maps, coordinate scale and protractor, and audio visual markers.
Learning Objective:	• Trainee should be able to identify the different types of maps used in a NBCCC.
Samples of Behavior:	• Trainee should be able to locate grid coordinates on base grid maps and on Universal Transverse Mercator (UTM) maps.
Notes:	

READ MAPS/USE LOCATION REFERENCE MATERIALS

BACKGROUND: To work in the NBCCC you are required to use different types of maps. Although the maps may be different the procedures for using them are the same. It is imperative that you understand how to read and use these maps. You'll reference locations on your maps constantly. You'll use these reference locations to direct your specialized teams, provide briefings to your superiors, and provide warnings of hazards. You must ensure the agencies you're coordinating with are using the same type of map as you, so when you reference a grid location they will reference the same one. Let's start with how to read a map.

- **How to Read a Map:** You've all heard the saying, "In the Door and Up the Stairs," or left to right then bottom to top. If you don't follow this rule religiously, sooner or later, you'll end up reversing the coordinates and sending your team to the wrong location. Each map, regardless of the type, is drawn to a certain scale. Although, subdivisions within grid squares and UTM grids are based on the metric system (10 divisions) the scale is the same for any measuring system. For example, a map with a scale of 1:400 means that 1 inch on the map equals 400 inches in reality or 1 millimeter on the map equals 400 millimeters in reality. Let's look at the different types of maps and the specific ways to read them.

- **Base Grid Map:** Below is a grid that represents a base grid map. How would you identify the location of the asterisk (*)? First you must identify the location from left to right. Since it is between the 5 and the 6, you will subdivide the block into 10 equal parts. So the first part of our coordinate would be 5.4. The 5 is for the vertical line. The 4 is the subdivided line. These subdivided lines are not on the map you will have to measure them yourself or have an overlay made for that purpose. Now it is time to identify the location from bottom to top. The asterisk is between the E and F line. Once again, you must subdivide this block. The asterisk appears to be on the 8th subdivided line. So the second part of your coordinate will be E.8. The E is for the horizontal line. The 8 is for the subdivided line. This leaves you with a grid coordinate of 5.4/E.8.

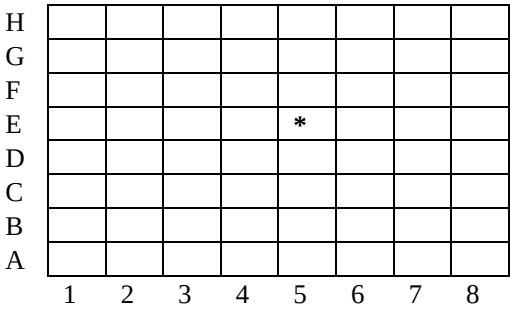


Figure 1, Grid Scale

- **Universal Transverse Mercator** *(UTM) Grid Map:* The UTM maps are used by all of our armed forces and allies for the purpose of the NBC Warning and Reporting System (NBCWRS). Normally you'll use two different scales, a 1:50,000 for chemical plotting and

a 1:250,000 for nuclear plotting. Although you read these maps the same way you read the base grid map the numbering system is different.

The UTM grid system allows you to position reference anywhere in the world to within 1 square meter accuracy. Location 32ULA2321046570 is an example of a full UTM grid coordinate, position referenced to 1 square meter. For detailed information on grid coordinates reference RTP E8, *Finding and Plotting Locations on a Map*. For plotting purposes the UTM grid coordinate will normally appear as LA232465. This coordinate position references to within 100 square meters accuracy. Let's take a look at each of the UTM maps.

- 1:50,000 Scale UTM Map: This map is used for chemical plotting. Using the coordinate LA232465 let's discuss how to find this location on the map.

To perform this task, follow these steps:

Step 1: Ensure the map you're using is for the 100,000 meter grid square LA. Most of the time on the 1:50,000 scale the entire map is in the same 100,000 meter grid square, but you need to be sure.

Step 2. Reading the map from left to right, you must locate 232. The first two numbers, 23, are written on the map. The third number, 2, is obtained by subdividing the square.

Step 3: Read the map from bottom to top to locate 465. Once again the first two numbers, 46, are on the map. The third number is obtained by subdividing the square.

NOTE:
To subdivide a square on this map you may use the coordinate scale and protractor shown on the next page. Place the protractor on the map with the triangle labeled 1/50,000 meters over the square you intend to subdivide.

- **1:250,000 Scale UTM Map:** This map is used for nuclear plotting. The UTM lines and numbers are hard to see at times on this map. Be careful not to use the latitude and longitude lines by mistake. Normally the UTM lines are blue in color, but verify this before plotting. Using the coordinate LA232465, let's discuss how to find this location on the map.

To perform this task, follow these steps:

Step 1: Ensure the map you're using is for the 100,000 meter grid square LA. With this map you will have several different 100,000 meter grid squares. It's a good idea to highlight the area you predict to use the most.

Step 2: Reading the map from left to right you must locate 232. The first number, 2, is written on the map. The second and third numbers, 32, are obtained by subdividing the square.

Step 3: Read the map from bottom to top to locate 465. Once again the first number, 4, is on the map. The next two numbers are obtained by subdividing the square.

NOTE:
To subdivide a square on this map you may use the coordinate scale and protractor shown below. Place the protractor on the map with the triangle labeled 1/250,000 meters over the square you intend to subdivide.

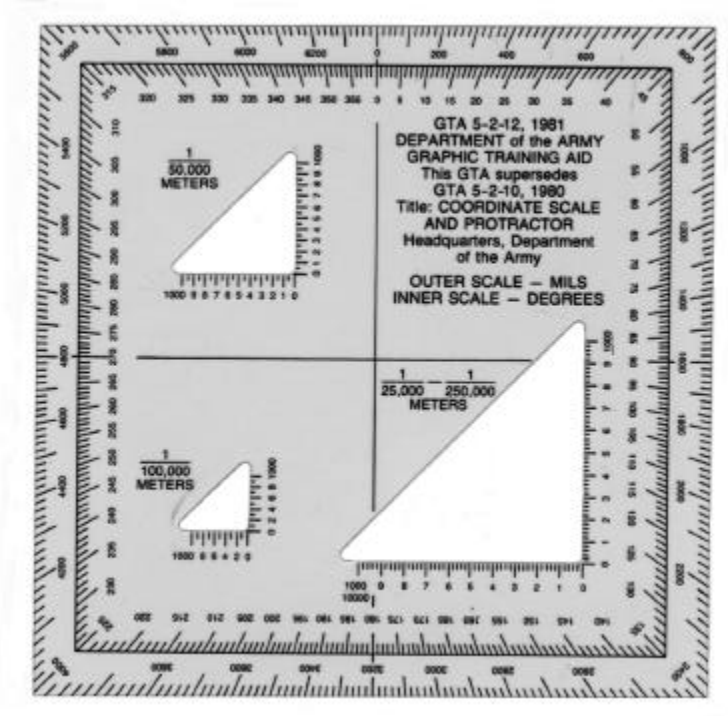


Figure 2, Coordinate Scale And Protractor

Review Questions
for
Read Maps/Use Location Reference Materials

Question	Answer
1. Which map is normally used for plotting nuclear attacks?	a. Base grid map b. UTM map, 1:50,000 c. UTM map, 1:250,000 d. All of the above
2. Maps are read top to bottom left to right.	a. True b. False
3. Using a base grid map, to identify the _____ number/s you have to subdivide the square?	a. First b. Second c. Third d. All of the above
4. Using a UTM map with a scale of 1:50,000, to identify the _____ number/s you have to subdivide the square?	a. First b. Second c. Third d. All of the above

READ MAPS/USE LOCATION REFERENCE MATERIALS

Performance Checklist		
Step	**Yes**	**No**
1. Set the trainee in a control center environment and give them grid coordinates to plot for all the maps.		
2. Did the trainee know what maps were required for the position?		
3. Did the trainee correctly plot the grid coordinates given?		
4. Did the trainee identify existing locations on the maps by grid coordinate?		
5. Did the trainee identify the purpose of each map, i.e... 1:50,000 scale UTM map for chemical plotting?		

FEEDBACK: Trainer should provide both positive and/or negative feedback to the trainee immediately after the task is performed. This will ensure the issue is still fresh in the mind of both the trainee and trainer.

MODULE 14 **AFQTP UNIT 9**

SIMPLIFIED PLOTS (14.9.10.1.)

DETAILED PLOTS (14.9.10.2.)

SIMPLIFIED PLOTS

DETAILED PLOTS

Task Training Guide

STS Reference Number/Title:	14.9.10.1., Simplified plots 14.9.10.2., Detailed plots
Training References:	• ATP-45, *Reporting Nuclear Detonations, Biological and Chemical Attacks, and Predicting and Warning of Associated Hazards and Hazard Areas.*
Prerequisites:	• Possess as a minimum a 3E931 AFSC.
Equipment/Tools Required:	• N/A
Learning Objective:	• Trainee should be able to construct a simplified chemical plot.
Samples of Behavior:	• Trainee should be able to receive NBC 1, 2 and 3 reports and determine the attack area and hazard area of a chemical attack by using simplified chemical plotting methods, derived from ATP-45.
Notes:	

SIMPLIFIED CHEMICAL PLOTS

Background: Chemical plotting is one of the critical task's you will perform in the NBCCC. Using raw data from NBC 1 reports and combining it with current weather information you can construct a chemical plot. Chemical plots are divided into two categories Type A (non-persistent) and Type B (persistent) attacks. Detailed chemical plots are used when the type of agent is known. The sole source document for chemical plotting is ATP-45 and should always be referenced when constructing a plot.

- **Chemical Downwind Message (CDM) :** A key element in constructing any type of plot is current surface weather conditions. Base weather provides CDM's to you at six hour intervals (the amount of time one CDM is valid) and is broken into three, two hour blocks of weather information. The CDM contains, downwind direction and speed, air stability, temperature, humidity, any significant weather and cloud cover. Anytime a CDM is used you must insure that it is valid at the time of use and that it was developed for your location. The following is an example of a CDM. (See Figure 1)

NBCEVENT/CDM//
AREAM/ECQ4//
ZULUM/011200ZMAY97/011300ZMAY97/011900ZMAY97
UNITM/-/DGG/KPH/C//
WHISKEYM/070/022/6/15/7/-/1//
XRAYM/075/025/4/13/9/6/2//
YANKEEM/080/028/4/12/8/-/2//

0 0 0	**0 0 0**	**0**	**0 0**	**0**	**0**	**0**
Wind Direction	**Wind Speed**	**Stability**	**Temp C^0**	**Humidity**	**Weather Phenomena**	**Cloud Cover**

Figure 1, Chemical Downwind Message

- **Type A Chemical Plots:** Type A chemical plots are constructed after each non-persistent attack. There are two distinct plots under Type A which are referred to as **cases** (1 and 2). Determining which **case** to use is based on wind speed. If the wind speed is 10 km/h or less then you use **case** one and if the wind speed is 10 km/h or greater then case two is used. In determining the case always use a current CDM. Case one plot's are **always a circle plot** with a one km radius circle around the center of the attack location and a 10 km radius circle around the attack location . A case two plot is always constructed with wind speeds of 10 km/h or greater. The case two plot has a specific wind direction and 30 degree angles forming on each side of the center line. The downwind distance of a case two plot is determined by the air stability and delivery method.

- **Type B Chemical Plots** :Type B chemical plots are constructed after a confirmed persistent attack. There are six distinct plots which are again referred to as cases. Without exception all Type B plots have a maximum downwind distance of 10 km. Determining which case to use will be based on the wind speed and the size of the attack area. Cases 1, 3, and 5 are constructed when the wind speed is 10 km/h or less. Case 1 is a one km radius circle around the attack area and a10 km radius circle around the attack area. Case 3 is a 2 km radius circle around the center of the attack area and a 10 km radius circle around center the center of the attack area. Case 5 is a spray attack with a 1 km radius circle around the start and finish locations of the attack and a 10 km radius circle around this same two points. Cases 2, 4, and 6 are constructed when the wind speed is 11 km or greater. Case two is constructed with a one km radius attack area and a 10 downwind hazard. Case four is constructed with a 2 km radius circle attack area and a 10 km downwind hazard. Case 6 is a spray attack with two 1 km radius circles and two 10 km downwind hazard areas.

- **Recalculation:** It may necessary to recalculate an existing plot because of changes in weather conditions. The weather conditions that could cause you to recalculate a plot are wind direction changes of 30 degrees or more, a change in air stability category that extends the downwind hazard or a change in wind speed. (Remember, a new NBC 3 report has to be forwarded).

NOTE:
IAW ATP 45, Para 1205, A type A attack is to be assumed unless liquid is present which is subsequently confirmed to be a persistent agent.

PLOTTING PROCEDURES.

TYPE A, CASE 1 (See Figure 2)

To perform this task, follow these steps:

Step 1: Find the location of attack

Step 2: Draw a 1 km circle around the attack location

Step: 3 Draw a 10 km radius circle around the center of the attack location.

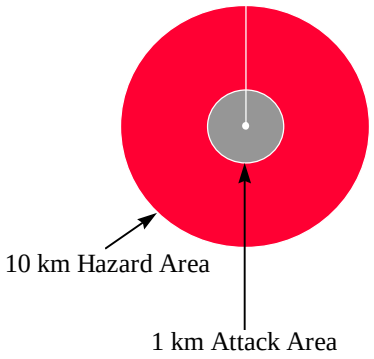


Figure 2, Type A, Case 1, Chemical Plot

RECALCULATION. Changing to a Type A case 2 because of change in wind speed to >10 km/h.

To perform this task follow these steps:

Step 1: Determine the distance the cloud has traveled prior to the weather change.

Step 2: Construct a circle around the center of the original attack with a radius of the distance the cloud has traveled.

Step 3: From the center of the attack area draw the new downwind direction line.

Step 4: From the center of the attack area draw a Grid north line.

Step 5: Measure and mark the distance where the downwind direction line intersects with the new attack area circle.

Step 6: Determine the new hazard distance and draw a line that represents that distance at right angles to the downwind direction line.

Step 7: Extend the downwind line, up wind from the center of the attack area twice the radius of the new attack area is.

Step 8 From the end of the upwind line (that you had just drawn) draw 2 lines that are tangent to the new attack circle and extend them until they intersect with the right angle line.

TYPE A, CASE 2

To perform this task, follow these steps:

Step 1: Find the location of attack.

Step 2: From the center of the attack location, draw a grid north (GN) line.

Step 3: Draw a 1 km radius circle around the attack location.

Step 4: Find the air stability category from a valid CDM (the 7th digit) and refer to table 12-III on page 12-21 in the ATP-45 to determine downwind distance (See Figure 3)

MEANS OF DELIVERY	DOWNWIND AXIS WHEN STABILITY CONDITION IS:		
	U	N	S
ARTILLERY, BOMBLETS, AND MORTARS.	10 KM	30 KM	50 KM
MULTIPLE ROCKET LAUNCHERS, MISSILES, BOMBS, AND UNKNOWN MUNITIONS.	15 KM	30 KM	50 KM

Figure 3, Air Stability Category

NOTE:
When information is not available concerning the nature of the munitions used in the attack, use the figures given for multiple launchers, missiles, and bombs.

Step 5: From the center of the attack area draw the downwind direction line (Remember draw the line long enough to cover the downwind distance).

Step 6: At the point on the downwind distance line that represents the maximum downwind distance draw a line at right angles and extend this line outward in both directions.

Step 7: Extend the downwind line upwind from the center of the attack location point 2 km.

Step 8: From the end of the upwind line draw two lines that are tangent to the 1 km attack area circle and extend them until they intersect with the maximum downwind distance line These lines will form 30 degree angles on each side of the downwind line.

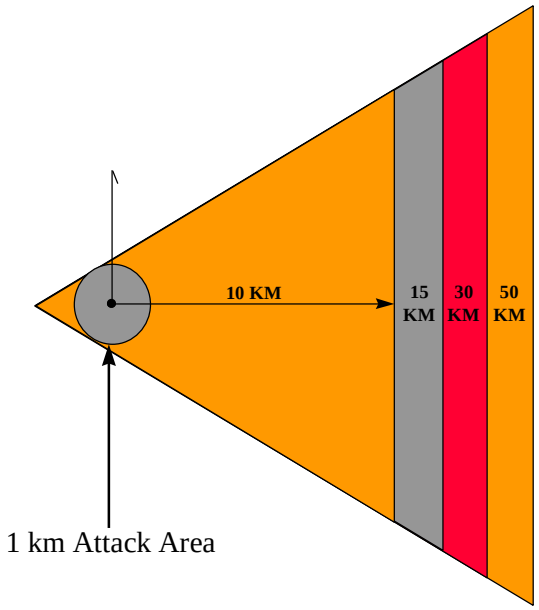


Figure 4, Type A Case 2 Chemical Plot

RECALCULATION. Changing from a Type A case 2 to a Type A case 1 because of a change in windspeed. (See Figure 4).

To perform this task, follow these steps:

Step 1: Determine the distance the chemical cloud has traveled prior to the change in weather.

Step 2: From the center of the original attack area measure the distance you have calculated from step one and mark that distance along the downwind direction line.

Step 3: Using the new point as the center draw a 10 km radius circle until it intersects with the original tangent lines.

Changing because of a of a shift in the wind direction of 30 degrees or more.

To perform this task, follow these steps:

Step 1: Determine the distance the chemical cloud has traveled prior to the change in weather.

Step 2: From the center of the original attack measure the distance you have calculated and mark it on the downwind distance line.

Step 3: Draw a line at right angles through the mark that you have made (step 2) until it meets the 30 degree lines form the original plot.

Step 4: Using the mark that you made on the downwind direction line (step 2) as the center, draw a circle with the radius being the distance from your mark to one of the 30 degree tangent line.

Step 5: From the center of this new circle draw a new representative downwind direction line.

Step 6: From the center of the new attack area measure the remaining distance the cloud will travel and mark on the new downwind direction line.

NOTE:
If this new distance falls within circle, then move it to the perimeter of the circle.

Step 7: Draw a line at right angles to the downwind direction line and extend it out.

Step 8: Extend the downwind line, up wind from the center of the attack area twice the radius of the new attack area is.

Step 9. From the end of the upwind line (that you had just drawn) draw 2 lines that are tangent to the new attack circle and extend them until they intersect with the right angle line.

NOTE:
Blood agent attacks are always plotted with an attack location and a one km radius circle around the attack location.

TYPE B, Case 1

To perform this task, follow these steps:

Step 1: Estimate the center of the attack area.

Step 2: Draw a 1 km circle around the center of the attack location.

Step 3: Draw a 10 km radius circle around the center of the attack location.

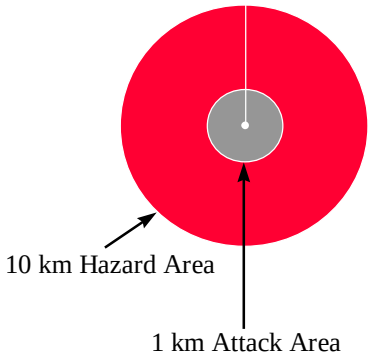


Figure 5, Type B Case 1 Chemical Plot

RECALCULATION. Changing plot if wind speed goes above 10 km/h.

NOTE:
If this new distance falls within circle, then move it to the perimeter of the circle.

NOTE:
Construct new plot using Type B case 2 steps, remembering that the old plot is left up until actual conformation of no chemical presence in old hazard area..

TYPE B, Case 2. (See Figure 6)

To perform this task, follow these steps:

Step 1: Estimate the center of the attack area.

Step 2: From the center of the attack location, draw a grid north (GN) line.

Step 3: Draw a 1 km radius circle around the center of the attack location

Step 4: From the center of the attack area draw the downwind direction line (Remember draw the 10 km)

Step 5: At the point on the downwind distance line that represents the maximum downwind distance draw a line at right angles and extend this line outward in both directions.

Step 6: Extend the downwind line upwind from the center of the attack location point 2 km.

Step 7: From the end of the upwind line draw two lines that are tangent to the 1 km attack area circle and extend them until they intersect with the maximum downwind distance line These lines will form 30 degree angles on each side of the downwind line.

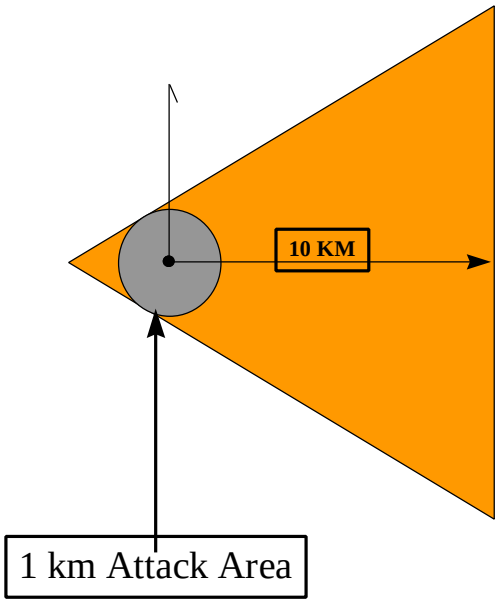


Figure 6, Type B Case 2 Chemical Plot

RECALCULATION. Changing plot if wind speed goes below 11 km/h.

NOTE:
Construct new plot using Type B case 1 steps, remembering that the old plot is left up until actual conformation of no chemical presence in old hazard area.

Change plot if wind direction changes 30 degrees or more.

To perform this task, follow these steps:

NOTE:
Construct new plot using new downwind direction line and steps 1 through 7 Type B case 2 remembering to leave up the old plot until actual conformation of no chemical presence in the old hazard area.

TYPE B, Case 3. (See Figure 7)

Step 1: Estimate the center of the attack area.

Step 2: Draw a 2 km circle around the center of the attack location.

Step 3: Draw a 10 km radius circle around the center of the attack location.

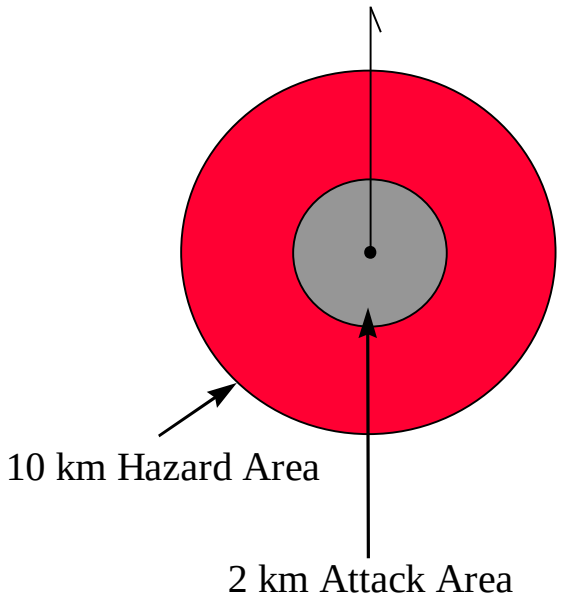


Figure 7, Type B Case 3 Chemical Plot

RECALCULATION. Changing plot if wind speed goes above 10 km/h.

NOTE:
Construct new plot using Type B case 4 steps, remembering that the old plot is left up until actual conformation of no chemical presence in old hazard area.

TYPE B, CASE 4 (See Figure 8)

Step 1: Estimate the center of the attack area

Step 2: From the center of the attack location, draw a grid north (GN) line.

Step 3: Draw a 2 km radius circle around the center of the attack location

Step 4: From the center of the attack area draw the downwind direction line (Remember draw the 10 km).

Step 5: At the point on the downwind distance line that represents the maximum downwind distance draw a line at right angles and extend this line outward in both directions.

Step 6: Extend the downwind line upwind from the center of the attack location point 2 km.

Step 7: From the end of the upwind line draw two lines that are tangent to the 1 km attack area circle and extend them until they intersect with the maximum downwind distance line These lines will form 30 degree angles on each side of the downwind line.

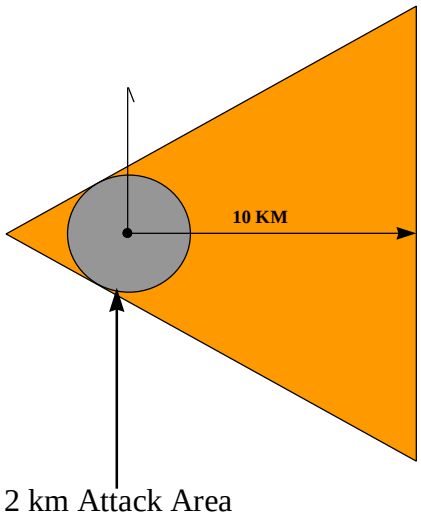


Figure 8, Type B Case 4 Chemical Plot

RECALCULATION. Changing plot if wind speed goes below 11 km/h.

NOTE:
Construct new plot using Type B case 3 steps, remembering that the old plot is left up until actual conformation of no chemical presence in old hazard area..

Change plot if wind direction changes 30 degrees or more.

To perform this task, follow these steps:

NOTE:
Construct new plot using new downwind direction line and steps 1 through 7 Type B case 4 remembering to leave up the old plot until actual conformation of no chemical presence in the old hazard area.

TYPE B, Case 5. (See Figure 9)

Step 1: Find the starting point and ending point of the attack

Step 2: Connect the end points to form attack line

Step 3: Draw a 1 km circle around each attack point

Step 4: Connect these circles on both sides by drawing tangents to each circle parallel to the attack line, this area is considered the attack area.

Step 5: Draw a 10 km circle around each attack point

Step 6: Connect the 10 km circles on both sides by drawing tangents to the circles (parallel to the attack line), which will become the hazard area.

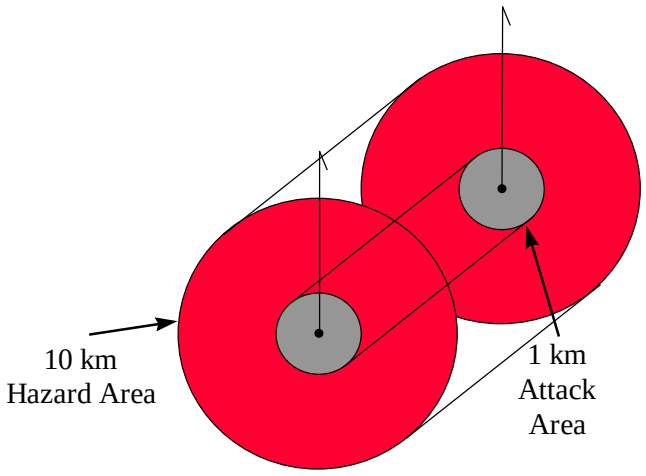


Figure 9, Type B Case 5 Chemical Plot

RECALCULATION. Changing plot if wind speed goes above 10 km/h.

NOTE:
Construct new plot using Type B case 6 steps, remembering that the old plot is left up until actual conformation of no chemical presence in old hazard area

TYPE B, Case 6. (See Figure 10)

Step 1: Find the starting point and ending point of the attack

Step 2: Draw a 1 km radius circle around each attack point. Connect these circles on both sides by drawing tangents to the circles parallel to the attack lines, once complete this forms the entire hazard area.

Step 3: Draw a Grid North line from the center of each circle (Consider each circle as a separate attack area.

Step 4: From the center of each attack area draw the downwind direction line (Remember the 10 km downwind distance).

Step 5: At the 10 km point on each downwind direction line, draw a line at right angles to the direction line and extend out.

Step 6: Extend both downwind direction lines upwind from the center of the attack location point 2 km.

Step 7 From the end of each upwind line draw two lines that are tangent to the 1 km attack area circle and extend them until they intersect with the maximum downwind distance line These lines will form 30 degree angles on each side of the downwind lines.

Step 8: Draw a line connecting the downwind corners of the two vapor hazard areas.

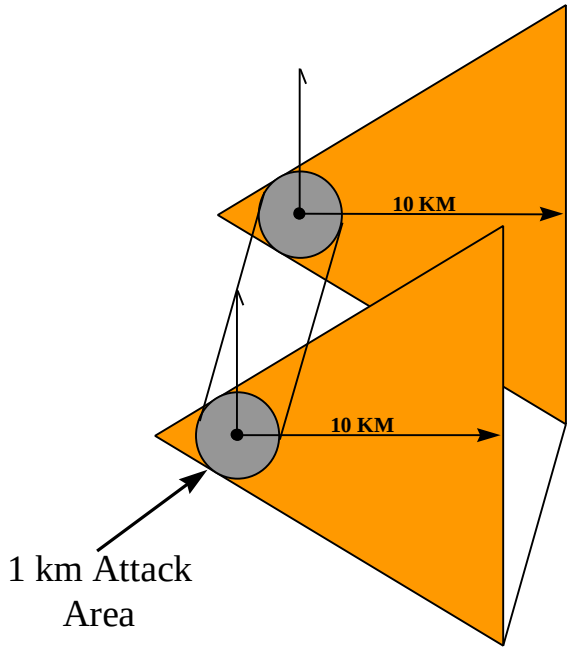


Figure 10, Type B Case 6 Chemical Plot

RECALCULATION. Changing plot if wind speed goes below 10 km/h.

NOTE:
Construct new plot using Type B case 5 steps, remembering that the old plot is left up until actual conformation of no chemical presence in old hazard area.

Change plot if wind direction changes 30 degrees or more.

NOTE:
Construct new plot using new downwind direction line and steps 1 through 8 Type B case 6 remembering to leave up the old plot until actual conformation of no chemical presence in the old hazard area.

DETAILED CHEMICAL PLOTTTING: Detailed chemical plotting is only used for **Type A case 2** plots.

To construct a detailed plot you must have specific information:

1. A confirmed use of either **Soman** or **Sarin** nerve agent.

2. The payload of the weapon/s employed.

3. The air stability category.

4. The wind Speed

5. The effects on unprotected personnel downwind from the attack location, LCt 50, ICt 50 , or Miosis.

If items 1 through 4 are available, you can construct a detailed plot using the matrix located in ATP 45, Volume 1, annex E Table 1 through 1V, pages E-3 through E-6.

HINT:
A detailed plot is a Type A case 2 plot with varying downwind distances.

HINT:
Right now at base level we have no way of confirming the different types of G nerve agent.

HINT:
Always refer to ATP 45-when constructing a detailed plot.

SIMPLIFIED PLOTS

DETAILED PLOTS

Performance Checklist		
Step	**Yes**	**No**
1. Was trainee able to interpret Chemical downwind message?		
2. Did trainee understand the difference between a persistent and non-persistent chemical attack?		
3. Did trainee understand the difference between types and cases of plots?		
4. Did trainee know the different reasons for recalculation?		
5. Did trainee understand the difference between attack area and hazard area?		
6. Did trainee use the matrix provided in Type A cases 2, step 4 to determine downwind hazard distance?		

FEEDBACK: Trainer should provide both feedback to the trainee immediately after the task is performed. This will ensure the issue is still fresh in the mind of both the trainee and trainer.

MODULE 14 **AFQTP UNIT 9**

ASSESS CHEMICAL HAZARDS

(14.9.10.3.)

DETERMINE CHEMICAL PERSISTENCY

(14.9.10.4)

ASSESS CHEMICAL HAZARDS

Task Training Guide

STS Reference Number/Title:	14.9.10.3, Assess chemical hazards 14.9.10.4, Determine Chemical Persistency
Training References:	• ATP-45, Reporting Nuclear Detonations, Biological and Chemical Attacks. • AFMAN 32-4017, Civil Engineer Readiness Technician's Manual for Nuclear, Biological, and Chemical Defense. • CDC 3E951 • Persist 2
Prerequisites:	• Possess as a minimum a, 3E931 AFSC
Equipment/Tools Required:	• ATP-45 Vol I and II, Reporting Nuclear Detonations, Bilogical and Chemical Attacks and Predicting and Warning of Associated Hazards and Hazard Areas.
Learning Objective:	• Using proper nomograms and charts, the student will be able to assess the hazards and persistency of an enemy attack involving chemical warfare agents.
Samples of Behavior:	• Identify the key physical properties of chemical warfare agents. • Determine the physiological characteristics of chemical warfare agents. • Determine chemical persistency after an enemy attack.
Notes:	
• "Persist 2" a chemical persistency program that can be downloaded from the AFCESA web site at http://www.afcesa.af.mil/.	

Assess Chemical Hazard and Persistency

Background: In the previous section you learned how to plot a chemical agent attack, but you are also required to provide additional information about attacks to your bases senior leadership. They will use this information to make many critical life saving decisions on how the base will continue with the mission during and after an attack involving chemical warfare agents. They need to know how chemical agents effect the base and people, the amount of time the hazard will be in the immediate area, and possible actions to take for recovering from the attack. You must be prepared to provide this information. This QTP contains extracts from CDC 3E9X0, AFMAN 32-4017, and ATP 45. These documents will prove to be invaluable to you in your quest to learn how to assess chemical hazards. Prior to assessing the chemical hazard from an attack, you must know how the agent was delivered, the physical characteristics, meteorological data, and various other constraints that are listed below.

Prediction factors

Means of delivery

The means of delivery plays an important role in estimating the total area covered by contamination. In laymen's terms, the more agent that you have (large munitions), the greater the vapor hazard you must plot. In addition, if a munition functions as an airburst, it causes a larger area contaminated with liquid/solid CW agents than if it functions as a surface burst. If you're in a situation where you do not know the means of delivery, then you go with the worst case default which is to assume a missile air burst.

Physical form of chemical agent

The enemy can deliver CW agents against your installation in a variety of physical forms: liquid, solid, and/or vapor. The physical form of the agent is the greatest factor of concern in the prediction process.

Liquid

Agents delivered in liquid (presenting both a contact and vapor hazard) are considered to be a persistent agent. Persistency is largely "in the eye of the beholder," i.e., there isn't a specified time associated with the definition. For example, we don't say that all agents lasting over four hours are persistent and all agents lasting less than four hours are non-persistent. The enemy may use liquid agents in "neat" or "thickened" form. A neat agent is an agent in pure form while a thickened agent consists of a CW agent in which the enemy places a polymer (plastic) or some other substance in the CW agent to increase the agent's persistency.

Solid

Solid CW agents (presenting both a contact and possibly vapor hazard) for the purpose of chemical hazard prediction are most often considered as a persistent hazard. Like the CW agents in liquid form, the enemy uses solid agents to inhibit access to certain locations orto make supplies unusable. However, solid agents do not have the persistency of agents in liquid form.

Vapor

The final physical form of a CW agent is vapor (gas) which presents only a vapor hazard. Vapor attacks may be an inhalation hazard as well as a vapor hazard to a person's skin. A vapor attack is called a non-persistent attack. It's likely that the enemy uses a vapor attack to harass personnel and provide casualties without contaminating terrain with liquid/solid contaminates.

Meteorological factors

The primary source for weather information you use in chemical hazard prediction is the CDM. The main weather information you'll use during the chemical plotting process is:

1. Representative downwind direction: mean surface downwind direction toward which the chemical cloud travels.
2. Representative downwind speed: mean surface downwind speed in the hazard area; affects how far and how quickly the cloud will travel. High winds increase the rate of evaporation of liquid chemical agents and the rate at which chemical clouds dissipate.
3. Humidity and precipitation: high humidity increases the effectiveness of blister agents. Heavy rains lessen the impact of liquid or solid chemicals, but don't necessarily neutralize them.
4. Air stability: displayed as unstable, neutral, or stable; affects how far the cloud will travel.
5. Surface temperature: affects agent persistency.

Constraints

When calculating the predicted downwind hazard area from chemical attacks, many factors affect the accuracy; consequently, ATP–45 shows large "better safe than sorry" plots instead of detailed "footprints." Some of the following factors are not directly considered when plotting typical chemical attacks; keep these in mind as you brief commanders on your prediction.

1. Specific type and amount of chemical agent(s).
2. Terrain composition.
3. Presence of, type of, and amount of vegetation.
4. Type of surface (roads, dirt, etc.).
5. Weather phenomena (rain, clouds, etc.).
6. Surface air temperature.
7. Humidity.

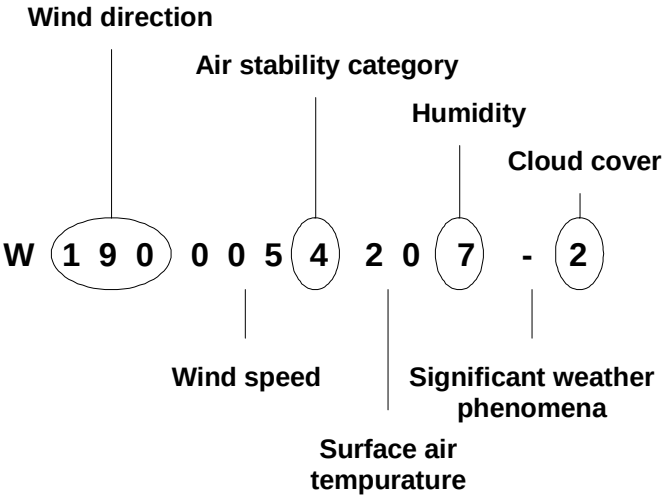
If you're placed in the position of assessing chemical hazards and persistency, finding out what capabilities the enemy has prior to the attack. Find out the type of agent, physical characteristics, delivery systems, and how big of stockpile. You can find out most of this information by contacting your bases intelligence section, and reading intelligence reports and messages. Arming yourself with this knowledge and answering the critical questions concerning these chemical agents prior to the attack will greatly enhance your ability to provide your boss with timely and accurate answers under fire.

Step 1. Determine what type of agent was used. Use any resource that you have available. Normally this information will flow to you from your reconnaissance teams, an NBC 1 Report, other types of control centers, or possibly your shelter teams.

Step 2. From the same source you used to determine what agent was used, you will need to determine how the agent was delivered and what the physical characteristics (solid, liquid, gas, or dusty) are.

HINT:
You can determine information concerning the chemical agents characteristics if you know what agent was used. All critical information pertaining to chemical agent characteristics can be obtained in Attachment 2 of AFMAN 32-4017. You should also refer to any intelligence reports and the world wide threat documents to ascertain if there are any threats not covered in Attachment 2 that affect your area.

Step 3. Determine the current air temperature. Use a current CDM or whatever method you have at your disposal. Other excellent sources of meteorological data are the base weather station, WeatherPAC, your reconnaissance teams or observers in the field.



Example CDM line.

Step 4. Use Tables A2.1. through A2.10 in Attachment 2 of AFMAN 32-4017 to determine the following information on the chemical warfare agent you're dealing with:

1. Chemical Agent Name

2. Physical State

3. Odor

4. Skin and Eye Toxicity, or how the agent effects the human body

5. Protection that is Required

6. Persistency (you will find short notes about chemical agent persistency in these tables, to find more detailed information you must continue with the following steps)

NOTE:
To assess the chemical persistency of the agent used, there are various tools available to help you accomplish this. However, AFMAN 32-4017, the Readiness Technicians Manual, paragraph A2.15.3., states ATP 45 possesses the only wide spread persistency chart in so far as the U.S. military services are concerned. This chart is located on page 12-22 of ATP 45. However, this chart provides only exceptionally broad categories such as "3 to 10 days in the attack area" and "2 - 4 days in the downwind hazard area". The disadvantage of using these charts is that it does not consider critical persistency-affecting factors such as wind speed and the type of agent itself. Furthermore, vague as it is, its operational effectiveness is further degraded because it's based on a 10 g/m2 agent disposition, a concentration level double what we expect the worst case to be at most Air Force locations. It does not come close to approximating the persistency of any agent, except VX in some cases, whose hazard duration was calculated through the variety of "detailed" scientific studies or methods. In terms of likely threat agents to Air Force installations, the worst example of this would be GB. While ATP 45 might give a "3 to 10 days" answer, most detailed persistency calculations show the probable persistency to be less than an hour or two. Certainly, different response procedures are required for a situation in which the hazard will rapidly disappear as opposed to a hazard situation that will continue for an extended period of time.

The "Persist 2" chemical persistency program is the preferred program for Readiness personnel to use when preparing detailed chemical persistency calculations. You will find detailed information and instructions for Persist 2 in Attachment 2 of AFMAN 32-4017

NOTE:
To ensure you are well versed on all methods of determining chemical persistency, you will first be do a very simple method of determining persistency using a chart from ATP 45 then a more complex and accurate method using a chart derived from Persist 2.

Step 5. Using the following chart, locate the persistency of the chemical agent. This chart is an extract from Table 12-IV, on page 12-22 in ATP-45. Using your daily mean surface temperature

you can predict probable time after ground contamination at which personnel may safely remove masks.

ATP–45 Persistency Data		
Daily Mean Surface Temperature	**Within the Attack Area (number of days)**	**Within the Hazard Area (number of days)**
< 0 to 10º C	3 to 10	2 to 6
11 to 20º C	2 to 4	1 to 2
21 to > 30º C	up to 2 days	up to 1 day
1. The estimations assume ground contamination densities up to 10 g/m^2.		
2. In making hazard estimates, vapor has been considered to be the determining factor within the attack area as well as in the downwind hazard area. The duration of hazard from contact with bare skin is, however, difficult to predict. The duration can only be determined by the use of chemical agent detection or confirmation devices.		
3. When temperatures are consistently low, the duration of contamination may be longer than indicated in the table. The absence of vapor does not preclude the presence of contamination.		
4. Daily mean surface air temperature may be obtained from local meteorological sources.		

Step 7. For a more accurate and detailed method of determining chemical persistency use the following Table. It is an extract from AFMAN 32-4017. The following charts are derived from Persist 2 and provide representative calculations (95% agent loss) for likely threat agents.

Table A2.20. Representative Chemical Persistency Table.

PERSISTENCY (HOURS)[1]									
AGENT	5C 1KNOT	5C 3KNOT	5C 6 KNOT	10C 1KNOT	10C 3KNOT	10C 6 KNOT	20C 1KNOT	20C 3KNOT	20C 6 KNOT
HD	111	65	42	68	40	26	28	16	10
GB	1.2	0.85	0.6	0.85	0.6	0.45	0.45	0.3	0.25
GD	8.2	5.85	4.25	5.4	3.85	2.8	2.45	1.75	1.25
TGD	14	10	7.2	9.1	6.5	4.7	4.1	2.9	2.1
GF	77	55	40	45	32	24	17	12	8.8
VX	855	810	757	415	393	368	110	104	97
AGENT	25C 1KNOT	25C 3KNOT	25C 6 KNOT	35C 1KNOT	35C 3KNOT	35C 6 KNOT	45C 1KNOT	45C 3KNOT	45C 6 KNOT
HD	18	11	7	8.25	4.9	3.1	4	2.35	1.5
GB	0.3	0.2	0.15	0.15	0.1	0.1	0.1	0.05	0.05
GD	1.7	1.2	0.85	0.85	0.6	0.45	0.45	0.3	0.2
TGD	2.9	2	1.5	1.4	1	0.7	0.8	0.5	0.4
GF	11	7.55	5.6	4.65	3.3	2.4	2.15	1.55	1.1
VX	59	56	53	19	18	17	6.75	6.4	5.95

[1] Persistency data derived from Persist 2 program. Figures represent 900 micron-sized droplets and a 95% evaporation rate of the agent (which should adequately address worst case scenarios for operational purposes). Results over 10 hours are rounded to the nearest hour and figures less than 10 hours are broken down into fractions of an hour. Since the Persist 2 program doesn't address "L", and the detailed charts from the 1993-2003 version of the Worldwide Chemical Biological Threat to Air Bases is based on 90% agent evaporation (versus 95), the author extrapolated the data from the two sources by establishing the relationship between HD and L persistency times from the charts and then applying that relationship to the Persist 2 figures for HD.

Step 8. Using your data on Agent type, Wind Speed, and Temperature locate the chemical agents persistency in hours. First in the left hand column you will find the agent you are dealing with. Then find the temperature group you are dealing with. As you can see your choices are 5C, 10C, 20C etc. etc. Next locate wind speed under the temperature column. Your choices are 1 Knot, 3 Knot, and 6 Knot. Directly under that column you will find your time in hours.

Step 9. For a more accurate assessment of the chemical agents persistency you must install Persist 2 on a computer and follow the instructions in paragraphs A2.15.4. through A2.15.5.9. of AFMAN 32-4017.

Review Questions
for
Assess Chemical Hazards

Question	Answer
1. According to ATP-45 if the temperature is between 11 and 20 degrees Celsius what is the estimated duration of hazard within the attack area?	a. 3 to 10 days b. 2 to 4 days c. 2 to 6 days d. up to 1 day
2. Which of these documents will you use to determine an agents physical characteristics?	a. AFMAN 32-4017 b. AFQTP 14 c. CDM d. NBC 1 Report
3. You will use a _____ to determine your current meteorological data.	a. Nuke 1 Report b. CDM c. AFMAN 32-4001 d. NBC 1 Report
4. If your base is hit with HD, and the current temperature is 35 degrees Celsius with a wind speed of 6 knots. What is the persistency of the agent in hours?	a. 3.1 b. 4 c. 4.9 d. 5.95

ASSESS CHEMICAL HAZARDS/DETERMINE CHEMICAL PERSISTENCY

Performance Checklist		
Step	**Yes**	**No**
1. Given a chemical agent type did the trainee locate in the proper manual and identify the physical properties of the chemical agent?		
2. Did the trainee explain the physiological characteristics of the chemical agent?		
3. Given the wind speed, temperature, agent type and characteristics, can the trainee locate and explain chemical persistency?		

FEEDBACK: Trainer should provide both positive and/or negative feedback to the trainee immediately after the task is performed. This will ensure the issue is still fresh in the mind of both the trainee and trainer.

MODULE 14 **AFQTP UNIT 9**

SIMPLIFIED PLOTS

(14.9.11.1.)

SIMPLIFIED PLOTS

Task Training Guide

STS Reference Number/Title:	14.9.11.1., Simplified plots
Training References:	• ATP-45, Reporting Nuclear Detonations, Biological and Chemical Attacks. • RTP E-6, Allied Tactical Publications 45, Nuclear Detonation (NUDET) Plotting and Fallout Prediction • CDC 3E9X1 volume 4 pg 5-14
Prerequisites:	• Possess as a minimum a, 3E931 AFSC
Equipment/Tools Required:	• Fallout template with fallout prediction plot refer to ATP 45(A) pages 7-5
Learning Objective:	• Trainee should be able to plot a simplified nuclear detonation.
Samples of Behavior:	• Trainee should be able to perform in a NBC cell control center operation using ATP 45(A) page 7-1 and correcting any problems, if possible, that may occur
Notes:	

SIMPLIFIED PLOTS

Background: Simplified Nuclear Plotting is a critical wartime skill, it requires nuclear detonation (NUDET) information (NBC 1 Reports) for a estimated yield of the weapons, type of burst, Attack Location/Ground Zero(GZ), current Effective Downwind Message (EDM), ATP 45(A) (sole reference for NBC plotting), and a 1-250,000 Universal Transverse Mercator (UTM) map of the Area of Responsibilities (AOR). With these few tools you should able to construct a simplified nuclear plot.

- **Effective Downwind Message (EDM).** This is produced by the base Weather squadron. It is valid for six hour time periods. EDM consist of seven numbers. The first three numbers are wind direction in degrees, the second set of three numbers are wind speed in knots per hour, and the last digit is the angle of expansion for the plot. (See Figure 1)

NBCEVENT/EDM//
AREAM/ECQ4//
ZULU/011200ZMAY97/011300ZMAY97/011900ZMAY97//
UNITM/-/DGG/KPH//
ALPHAM/200/010/4//
BRAVOM/205/012/4//
CHARLIEM/210/014/4//
DELTAM/220/016/4//
ECHOM/225/020/4//
FOXTROTM/230/030/4//
GOLFM/240/035/4//

Figure 1, Effective Downwind Message

- **Types of Burst.** Their are four types of nuclear burst. They are the High altitude, Air , Surface, and Sub-surface burst.
  - High Altitude Burst - takes place at an altitude equal or above 100,000 feet, it produces electromagnetic pulse (takes out all power).
  - The Air Burst is below 100,000 feet, designed for maximum blast and radiation.
  - The Surface Burst is were any portion of the fireball touches the surface of the earth, designed for maximum radioactive fallout.
  - Sub-surface Burst, it was designed for extremely heavy local residual radiation and short range surface shock.

To develop a simplified fallout plot, follow these steps:

- **Gather Information from NBC 1 Report(s).**

HINT:
Use lines J, L, and M, from the NBC 1 Report(s) to construct ground zero.

- **Draw/Plot Ground Zero.**

Step 1: Polar plot method is used only if one NBC 1 report is available.

Step 2: To do this you must locate and plot the position of the observer (using NBC report line Bravo).

Step 3: From the position of the observer, plot the azimuth (direction) of the attack (line Charlie).

Step 4: Multiply the flash to bang time (line Juliet) by the speed of sound 350 meters per second and mark the distance on the azimuth line.

Step 5: Locate the grid coordinates of the estimated GZ, this will be added to line Foxtrot in the NBC report.

Step 6: If there are two or more NBC 1 reports available for a specific attack use the Intersecting method. This method is more accurate.

Step 7: Locate and plot the position of each observers (line Bravo).

Step 8: From the position of each observer, plot the azimuth of the attack (line Charlie).

Step 9: Intersecting these azimuths will give you a estimations of GZ. Whenever azimuths do not cross to form a clear GZ location, the center of the plot (triangle, rectangle, etc..) will be considered GZ.

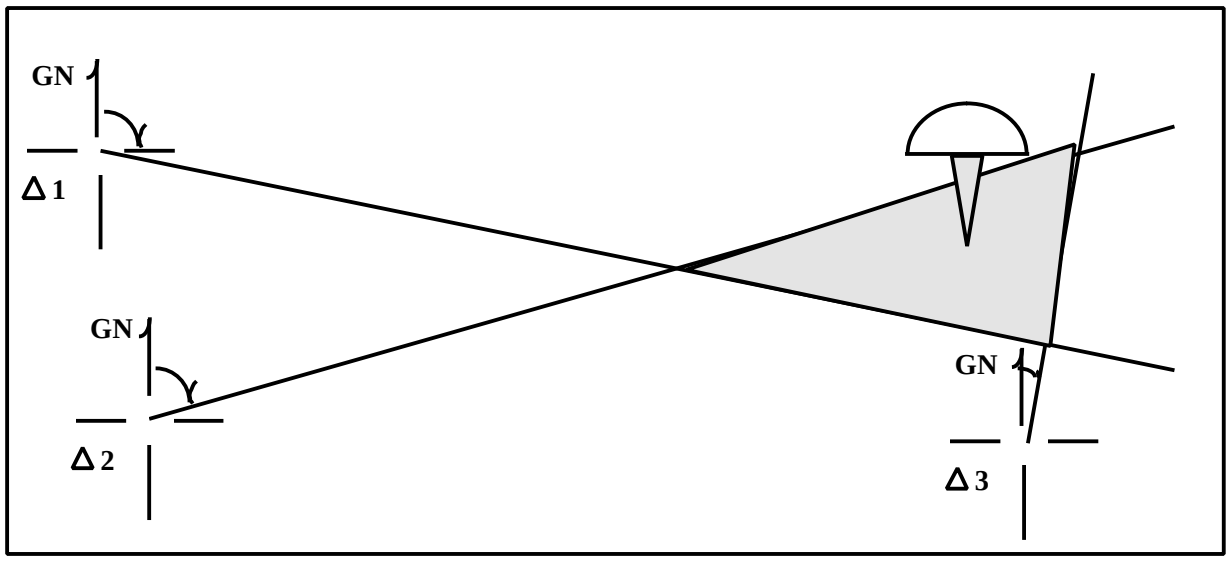


Figure 2, Simplified Fallout Plot

- **Estimating the Yield of the NUDET**.

HINT:
Maybe estimated by using NBC 1 Reports lines J, L, and M.

To perform this task, follow these steps:

Step 1: Use Nomograms in below figures to estimate yield.

NOTE:
All nomograms were extracted from ATP 45(a).

Yield Estimation Nomogram A-1

- Take the angular cloud width *(line LIMA)* and match it up to the nomogram column labeled "Angular Cloud Width"

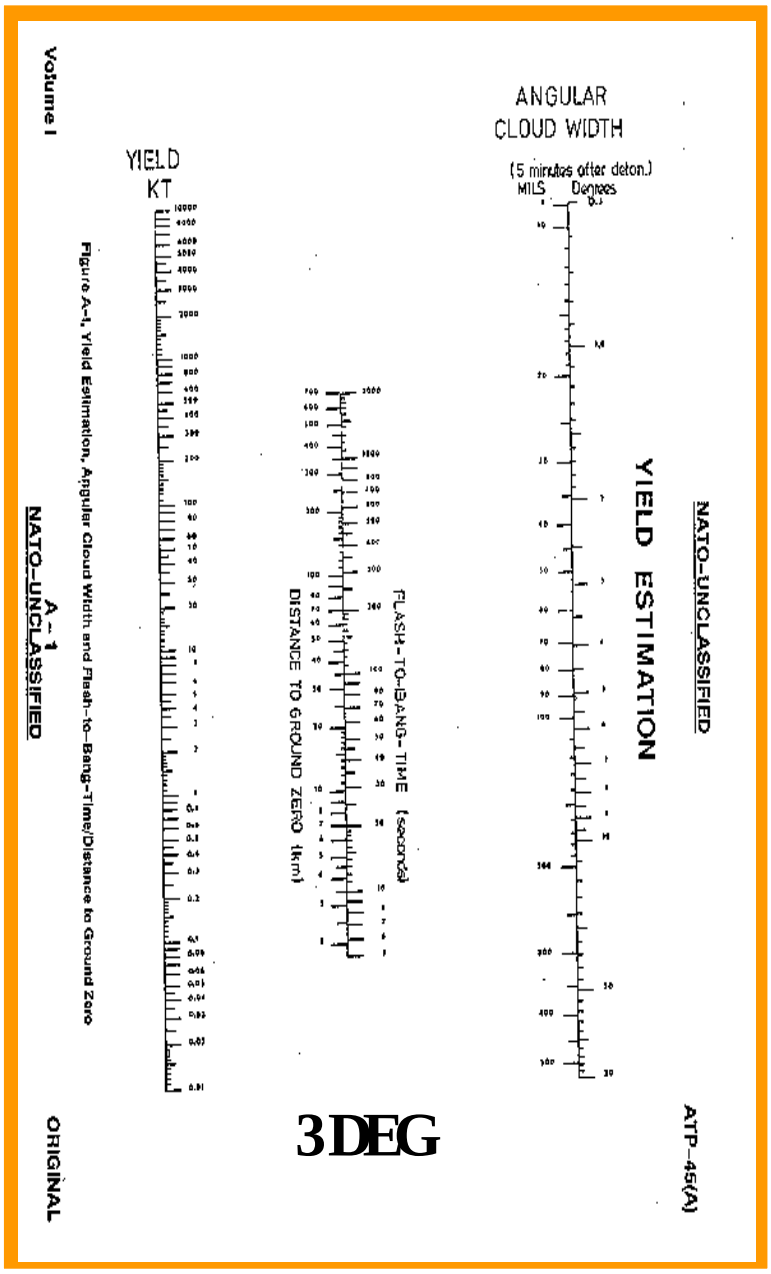


Figure A-1, Yield Estimation, Angular Cloud Width and Flash-to-Bang-Time/Distance to Ground Zero

Figure 3, Yield Estimation, Angular Cloud Width and Flash-to Bang Time/Distance to ground Zero.

Yield Estimation Nomogram A-2

- On the center column, find the figure for the cloud top or bottom that matches line MIKE of the NBC 1

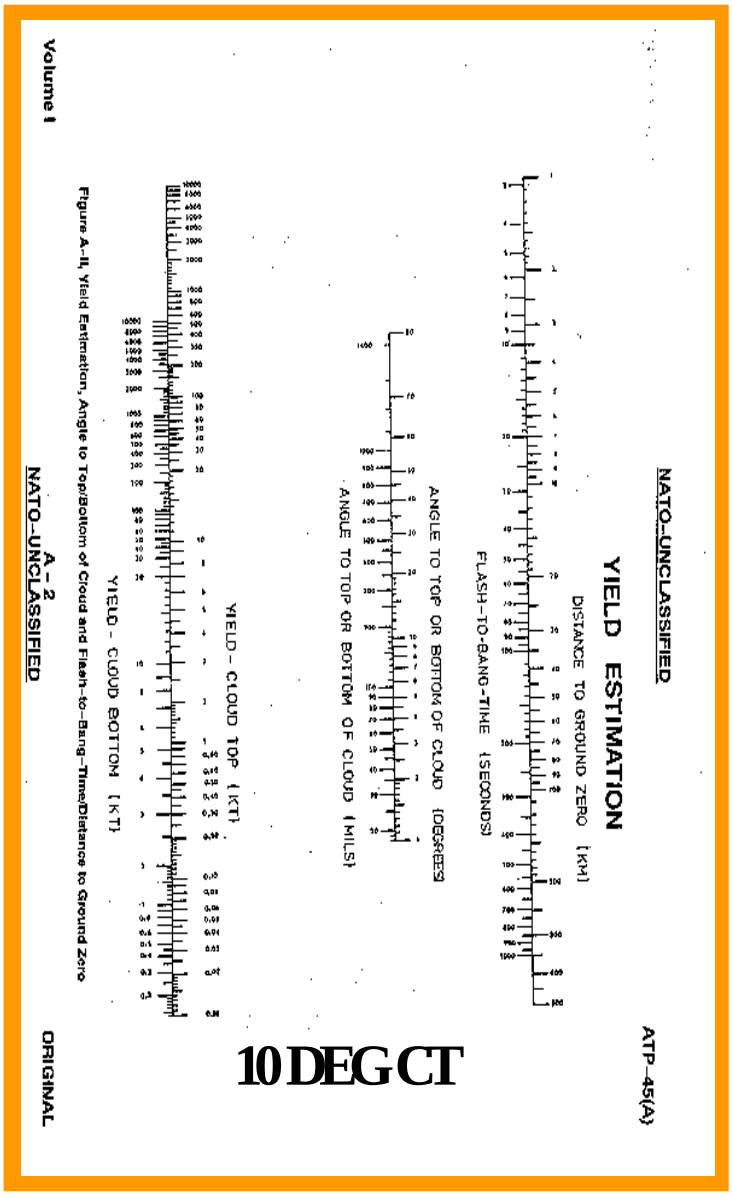


Figure 4, Yield Estimation, Angle to Top/Bottom of Cloud and F to B time/Distance to Ground Zero

Cloud Radius Nomograms A-3

Place your hairline horizontally on the columns labeled "Yield"

Use the maximum yield for that Yield group

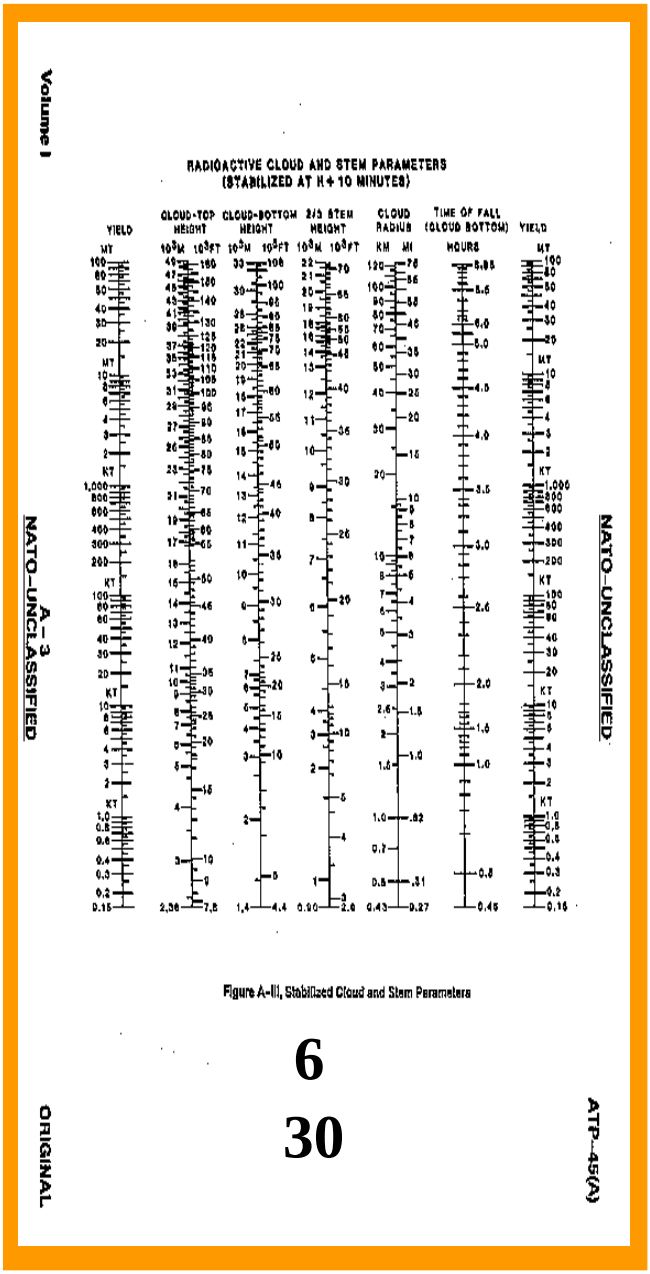


Figure 5, Height of stabilized cloud top and/or cloud bottom

Step 2: Use estimated yields to determine one of the seven pre-selected Yield Groups for cloud radius.

Step 3: Draw cloud radius around GZ.

Step 4: Determine type of burst from NBC 1 reports.

HINT:
High altitude burst are not plotted.

To perform this task, follow these steps:

Step 1: Locate grid coordinates of estimated GZ, (line Foxtrot).

- **Estimate Weapon Yield.**

Step 1: To estimate the yield of a nuclear weapon calculate using one of the three methods, by the flash-to-bang time and angular cloud width, by using the flash-to-bang time and cloud-top and/or cloud-bottom angle, or by using the height of the stabilized cloud -top/or cloud bottom.

Step 2: Flash-to bang time and angular cloud width. Yield estimation can be accomplished
when flash -to-bang time or distance to GZ and nuclear burst angular cloud width (measure five minutes after burst) are known.

Step 3: On the right column of the nomogram labeled yield cloud width (see figure), find the figure for the angular cloud width given in line Lima of the NBC 1 Report. Place a straight edge on this figure.

Step 4: On the center column of the nomogram, find the flash-to-bang time given in line Juliet of the NBC 1 Report or the distance to GZ if known. Place the middle of the straight edge on this figure.

Step 5: The place where the straight edge intersects in the left column is the estimated yield of the weapon.

Step 6: Flash-to-bang time and cloud top and/or cloud bottom angle. Yield estimation can be estimated when flash-to-bang time or distance from observer to GZ and cloud-top and/or cloud-bottom angle (measured ten minutes after burst) are known (see example). Place one end of the straight edge on this figure.

Step 7: On the center column, find the figure for the cloud-top and/or cloud bottom angle given in line Mike of the NBC 1 Report. Place the middle of the straight edge on this figure.

Step 8: The place where the straight edge intersects the left column of the nomogram is the estimated yield of the weapon. Ensure the correct side of the column is selected. If cloud-top was given, use the left side.

Step 9: Height of stabilized cloud top and/or cloud bottom. Yield estimation can be estimated when the height of the cloud top and/or cloud bottom (measured at ten minutes after burst) are known.

Step 10: Use the nomogram labeled Radioactive cloud stem parameters (see Figure), place straightedge horizontally on the column labeled Cloud-top height or cloud bottom height.

Step 11: Select the yield from the left or right columns.

- **Plot/draw Downwind Direction.**

To perform this task, follow these steps:

Step 1: Using current EDM to plot.

HINT:
Request new EDM every six hours prior to their expiration.

Step 2: Plot grid north (GN) on UTM map 1-250,000 select the wind direction from the EDM.

Step 3: Draw a GN line from the center of GZ to the wind direction.

- **Plot Downwind Direction for Zone 1.** (See Figure 6)

To perform this task, follow these steps:

Step 1: Estimate downwind speed and yield using the nomograms figure below.

Zone 1

Nomogram

A-7

First, find the group that the yield of the weapon used

Yield of Weapon: 6 KT

Yield Group:CHARLIE

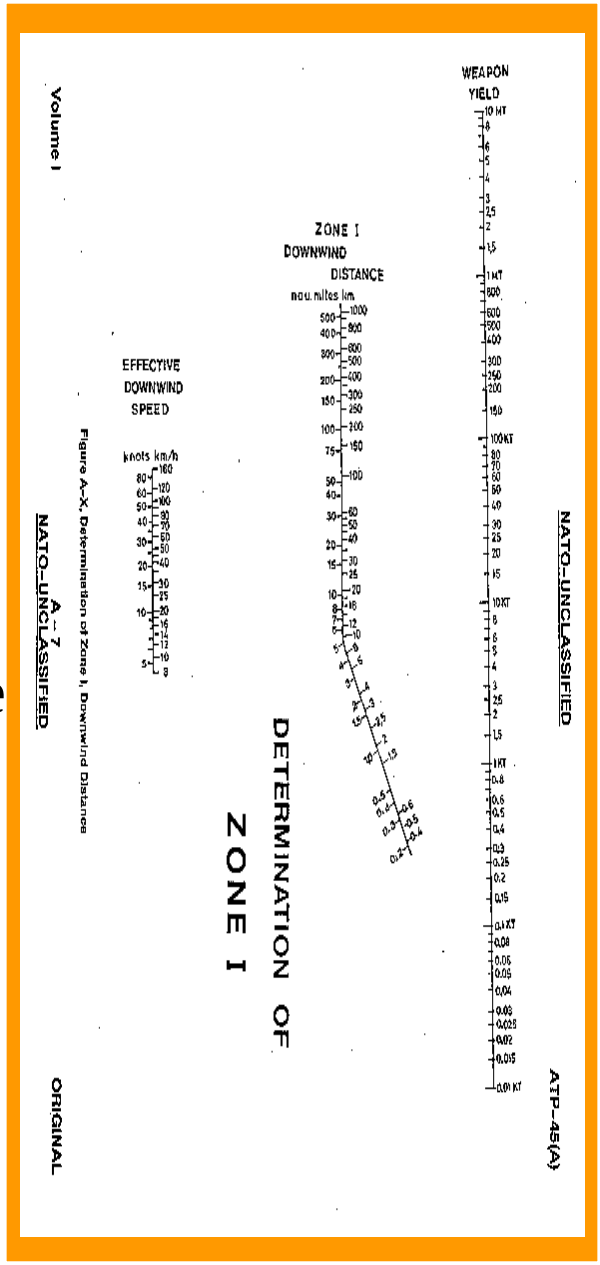


Figure 6, Zone 1 Yield Estimation

Step 2: Draw Zone II which is twice the distance of Zone I.

- **Yield Group.** (See Table 1)

HINT:
Plot yield groups using the Yield Groups A through G.

Table 1, Seven pre-selected yield group

1.	**Alpha**	**is**	**2KT or Less**
2.	**Bravo**	**is more than**	**2KT to 5 KT**
3.	**Charlie**	**is more than**	**5KT to 30KT**
4.	**Delta**	**is more than**	**30KT to 100 KT**
5.	**Echo**	**is more than**	**100KT to 300KT**
6.	**Foxtrot**	**is more than**	**300KT to 1000KT (1 MT)**
7.	**Golf**	**is more than**	**1000KT to 3000KT (3 MT)**

- **Estimated Arrival Times (EAT) of Radioactive Fallout.**

To perform this task, follow these steps:

Step 1: Plot the EAT from the downwind speed in kph.

Step 2: Write H+1 in this area towards GZ.

Step 3: Draw a second dotted arc twice the distance from GZ.

Step 4: Label this area H+2.

- **Label Simplified Nuclear Plot.**

To perform this task, follow these steps:

Step 1: Annotate plot which scale size was used i.e. 1-250,000.

Step 2: Annotate Yield of weapon (in KT).

Step 3: Annotate the date and time of attack.

Step 4: Annotate the location of attack.

Step 5: Annotate EDM used for the plot prediction.

- **Special Case.**

NOTE:
Use this case if the Effective Downwind Speed (EDS) is < 8 km/h or if the weapon is < 4.4 KT.

Step 1: Calculate the EDS distance, this will be the distance of Zone I.

Step 2: Draw a circle of the distance of zone I.

Step 3: Label this area Zone I.

Step 4: Draw an additional circle twice the distance for Zone II.

Step 5: Label this area Zone II.

Review Questions for Simplified Plots

Question	Answer
1. Information needed to complete a simplified nuclear plot is nuclear burst information, current EDM, and a simple template.	a. True b. False
2. There are two methods to determine ground zero?	a. Polar Method b. Dual Method c. Intersecting Method d. A and C
3. A Effective Downwind Message consist of ?	a. Wind speed, Downwind direction, and temperature b. Wind speed, Downwind direction. c. Seven digits. d. Time and distance
4. To be proficient at simplified nuclear plotting, you should always use a simple template.	a. True b. False
5. Simplified nuclear plotting is normally conducted on a 1-250,000 UTM map.	a. True b. False
6. What is the only reliable source for simplified nuclear plotting instruction?	a. NARP b. ATP 45(A) c. NBC plotting school d. all the above

SIMPLIFIED PLOTS

Performance Checklist		
Step	**Yes**	**No**
1. Set the trainee in a NBC Cell environment.		
2. Did the trainee know what information was required for plotting?		
3. Did the trainee identify who was to be briefed, and called after plot was completed?		
4. Did the trainee plot coordinates from on NBC 1 reports?		
5. Was the trainee able to plot correct H+1 and H+2?		
6. Did the trainee plot zone I and zone II?		

FEEDBACK: Trainer should provide both positive and/or negative feedback to the trainee immediately after the task is performed. This will ensure the issue is still fresh in the mind of both the trainee and trainer.

MODULE 14 AFQTP UNIT 9

PREPARE NBC REPORTS

(14.9.13.)

PREPARE NBC REPORTS

Task Training Guide

STS Reference Number/Title:	14.9.13., Prepare NBC reports
Training References:	• ATP-45 (A) Reporting Nuclear Detonations, Biological and Chemical Attacks, and Predicting and Warning of Associated Hazards and Hazard Areas • RTP E1, Survival Recovery Center Operations • QTP 14.9.11.1 Simplified Nuclear plotting • QTP 14.9.10.1 Simplified Chemical Plotting • 3E9X1 CDC, Volume 4
Prerequisites:	• Possess a 3E931 AFSC.
Equipment/Tools Required:	• N/A.
Learning Objective:	• Trainee should be able to identify and complete all types of NBC reports as well as identify the NATO NBC Reporting and Warning Organizational Structure.
Samples of Behavior:	• Trainee should be able to interpret incoming NBC reports and develop reports from raw data received from reconnaissance teams or observation posts.
Notes:	

PREPARE NBC REPORTS

Background: Working in the NBCCC you must have the ability to quickly interpret and prepare NBC reports. These reports are vital during any wartime contingencies which the enemy has the ability to employ Nuclear, Biological or Chemical weapons. Because of there importance in battlefield theater operations you must develop and maintain your skills through constant review and practice.

NOTE:
The single source for NBC reporting is ATP-45.

- **NATO NBC Reporting and Warning System.** A system has been developed to provide the most accurate data possible on enemy NBC attacks and resulting hazard areas to the various levels of command within NATO. This system allows you to report the following:
  a. Nuclear detonations
  b. Radioactive contamination
  c. Enemy biological or chemical attacks and resulting contamination
  d. Predicting and warning fallout areas
  e. Predicting and warning of chemical hazard areas

- **NATO NBC Reporting and Warning System Organizational Structure.** The NATO NBC reporting and warning organization is divided into the following categories:
  a. Source Level
  b. NBC sub-collection centers and NBC collection centers
  c. NBC control centers

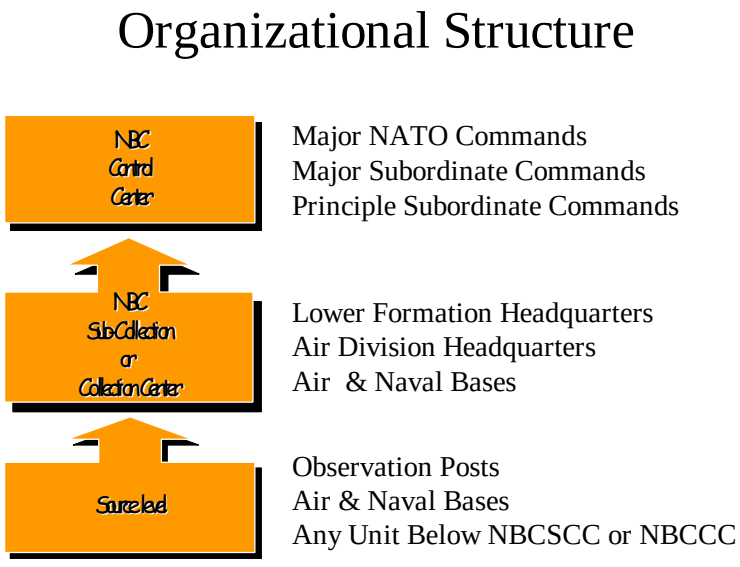


Figure 1, NATO NBC Reporting and Warning System Organizational Structure

- **Source Level.** Observation Posts (OPs) Air and Naval bases, or any agency below NBC or NBC sub-collection centers fall into this category.

- **Source Level Responsibilities:**

  a. Report the **initial** enemy use of Nuclear, Biological or Chemical weapons by the most expeditious means available. (NBC 1)
  b. Report immediately any further NBC attacks and subsequent data to the NBC sub-collection or NBC collection center. (NBC 1)
  c. Disseminate timely warnings of predicted hazard areas to enable forces to in crease their NBC state or readiness, to conduct monitoring and to prepare for survey and decontamination. (NBC 3)
  d. Report monitoring and survey results to the NBC sub-collection or NBC collection center. (NBC 4)
  e. Submit detailed information on chemical or biological attacks on request. (NBC 6)

- **NBC Sub-Collection Centers and NBC Collection Centers.** Corps or lower formation , headquarters, air division headquarters, sector operation centers fall into this into this category

- **NBC Sub-Collection or Collection Centers Responsibilities:**

  a. Report the **initial** enemy use of Nuclear, Biological and Chemical weapons by the most expeditious means by the most expeditious means available in accordance with directives and SOPs. (NBC 1)
  b. Clarify, consolidate, and evaluate NBC attack data reported from the source level or other NBC Centers or agencies (NBC 1 and NBC 2)
  c. Compute fallout predictions and chemical downwind hazards areas based upon processed NBC attack data and pass the appropriate warnings to units likely to be affected (NBC 3)
  d. Direct survey efforts within its' zone of observation.
  e. Analyze survey and monitoring results and pass actual contaminated areas to likely to be affected (NBC 4 and NBC 5)
  f. Request and provide detailed information on chemical and biological attacks as directed (NBC 6)
  g. Exchange NBC information with appropriate national military and civilian

- **NBC Control Center Level.** Major NATO Commands and Major Subordinate Commands fall into this category

- **NBC Control Center Responsibilities:**

  a. Report the **initial** enemy use of Nuclear, Biological, and Chemical weapons by the most expeditious means available in accordance with directives and SOPs (NBC 1)
  b. Clarify, consolidate, and evaluate NBC attack data reported from the source level or other NBC Centers or agencies (NBC 1, and NBC 2)
  c. Transmit promptly NBC warnings to adjacent HQ or agencies when predicted hazard areas extend beyond their own area of observation (NBC 3)
  d. Exchange NBC information with appropriate national military and civilian authorities as arranged by directives and SOPs
  e. Organize and coordinate the NBC warning system within its' area of observation by contributing to the war plans and issuing a comprehensive directive and/or SOP
  f. Submit reports to higher headquarters and adjacent agencies as required (NBC Summary)

- **Standard NBC Message Formats.** All organizations within the NATO NBC Reporting and Warning System use the following standard NBC message formats for reporting Nuclear, Biological, and Chemical attacks and predicted or actual hazard areas following attacks.

  a. **NBC 1** Observers initial report
  b. **NBC 2** Used for passing evaluated
  c. **NBC 3** Used for immediate warning of predicted contamination and hazard areas
  d. **NBC 4** Used for passing monitoring and survey results
  e. **NBC 5** Used for passing information on areas of actual contamination
  f. **NBC 6** Used for passing detailed information on chemical or biological attacks
  g. **NBC SITREP** Report used for passing information on the NBC situation (NOTE: The NBC SITREP is a free text message. Any rules for contents are given by the local national authority or command.)

NOTE:
All ground locations given in all NBC standard message formats must, whenever possible be given in Universal Transverse Mercator (UTM) grid coordinates, except in areas to which the UTM grid has not been extended.

- **Classification and Precedence.** Unless the NBC message contains specific operational information. e.g. effects on troops, all messages should be **Unclassified**. NBC 1 messages reporting the **FIRST** enemy use of Nuclear, Biological, or Chemical weapons **MUST** be given precedence **FLASH (Z).** All other messages should be given a precedence which reflects the operational value of the contents, normally **OPERATIONAL IMMEDIATE (O)** would be appropriate.

The examples below show a sample format that could be used sending NBC 1, 2, 3 reports which are the most common reports utilized by readiness personnel . Remember this is only an example and you may develop something at your base that better fits your needs.

NUCLEAR/BIOLOGICAL/CHEMICAL *NBC* MESSAGE

REPORT TYPE *(Mark One)*
☒ **NBC 1** ☐ **NBC 2** ☐ **NBC 3**

TYPE OF MESSAGE *(Mark One)*
☐ **NUCLEAR** ☐ **BIOLOGICAL** ☒ **CHEMICAL**

FROM: **Civil Defense *(Observer)***

TO: **Alpha Air Base**

PRECEDENCE *(Mark One)*
☐ **R** *(Routine)* ☐ **P** *(Priority)*
☐ **O** *(Immediate)* ☐ **Z** *(Flash)*

N = Nuclear Only ***C = Chemical Only*** ***NC = Nuclear or Chemical***

1	2	3	LETTER	MESSAGE CONTENT	EXPLANATION
	NC	NC	ALPHA		Strike Serial Number
N			BRAVO		Position of Observer
N			CHARLIE		Direction Measured Clockwise from Grid North, True North, or Magnetic North *(State Which)* of the Attack from the Observer
NC	NC	NC	DELTA	**040725ZJul97**	Date - Time Attack Started DTG
C			ECHO		Date - Time Attack Ended
C	NC	NC	FOXTROT	**FJ342432 Actual**	Location of Attack or Area Attacked *(Coordinates or Place - **Actual** or **Estimated** - State Which)*
NC	NC	NC	GOLF	**Bombs**	Means of Delivery - Kind of Attack
NC	NC	C	HOTEL	**Nerve Non-Persistent Ground Burst**	(**N**) Type of Burst, Including Height (**C**) Type of Agent, Persistency, and Height of Burst
N			JULIET		Flash-to-Bang Time *(Seconds)*
N			LIMA		Nuclear Burst Angular Cloud Width Measured at H+5 Minutes *(**Degrees** or **Mils** - State Which)*
N			MIKE		Stabilized Cloud Top Angle and/or Cloud Bottom Angle or Cloud Top Height and/or Cloud Bottom Height Measured at H+10 Minutes
	N	N	NOVEMBER		Estimated Yield
		C	PAPA ALPHA		Predicted Hazard Area *(Coordinates)*
		C	PAPA BRAVO		Duration of Hazard Within Attack Area and Within Hazard Area *(Days)*
C	C	NC	YANKEE		(**N**) Direction Measured Clockwise from Grid North to the Left then to the Right Radial Lines - 4 Digits Each (**C**) Representative Downwind Direction - 4 Digits / Representative Wind Speed - 3 Digits
		N	ZULU		Effective Wind Speed - 3 Digits / Downwind Distance of Zone I - 3 Digits / Cloud Radius - 2 Digits
C	C	C	ZULU ALPHA		Air Stability Conditions - 1 Digit / Temperature - 2 Digits / Humidity - 1 Digit / Significant Weather Phenomena - 1 Digit / Cloud Cover - 1 Digit
		C	ZULU BRAVO		Remarks *(**Type, Case, Downwind Hazard Distance**)*

Figure 2, Standard NBC Message Formats

Notice. This AFQTP is *NOT* intended to replace the applicable technical references nor is it intended to replace hands-on training. It is to be used in conjunction with these for training purposes only.

NUCLEAR/BIOLOGICAL/CHEMICAL *NBC* MESSAGE

REPORT TYPE *(Mark One)*: ☐ NBC 1 ■ NBC 2 ☐ NBC 3

TYPE OF MESSAGE *(Mark One)*: ☐ NUCLEAR ☐ BIOLOGICAL ■ CHEMICAL

FROM: **Alpha Air Base**

TO: **ATOC Bravo**

PRECEDENCE *(Mark One)*: ☐ R *(Routine)* ☐ P *(Priority)* ■ O *(Immediate)* ☐ Z *(Flash)*

N = Nuclear Only *C = Chemical Only* *NC = Nuclear or Chemical*

1	2	3	LETTER	MESSAGE CONTENT	EXPLANATION
	NC	NC	ALPHA	**A001**	Strike Serial Number
N			BRAVO		Position of Observer
N			CHARLIE		Direction Measured Clockwise from Grid North, True North, or Magnetic North *(State Which)* of the Attack from the Observer
NC	NC	NC	DELTA	**040725ZJul97**	Date - Time Attack Started DTG
C			ECHO		Date - Time Attack Ended
C	NC	NC	FOXTROT	**FJ342432 Actual**	Location of Attack or Area Attacked *(Coordinates or Place - **Actual** or **Estimated** - State Which)*
NC	NC	NC	GOLF	**Bombs**	Means of Delivery - Kind of Attack
NC	NC	C	HOTEL	**Nerve Non-Persistent Ground Burst**	(**N**) Type of Burst, Including Height (**C**) Type of Agent, Persistency, and Height of Burst
N			JULIET		Flash-to-Bang Time *(Seconds)*
N			LIMA		Nuclear Burst Angular Cloud Width Measured at H+5 Minutes *(**Degrees** or **Mils** - State Which)*
N			MIKE		Stabilized Cloud Top Angle and/or Cloud Bottom Angle or Cloud Top Height and/or Cloud Bottom Height Measured at H+10 Minutes
	N	N	NOVEMBER		Estimated Yield
		C	PAPA ALPHA		Predicted Hazard Area *(Coordinates)*
		C	PAPA BRAVO		Duration of Hazard Within Attack Area and Within Hazard Area *(Days)*
C	C	NC	YANKEE	**0240 DGG/010 KPH**	(**N**) Direction Measured Clockwise from Grid North to the Left then to the Right Radial Lines - 4 Digits Each (**C**) Representative Downwind Direction - 4 Digits / Representative Wind Speed - 3 Digits
		N	ZULU		Effective Wind Speed - 3 Digits / Downwind Distance of Zone I - 3 Digits / Cloud Radius - 2 Digits
C	C	C	ZULU ALPHA	**3/14C/7/-/0**	Air Stability Conditions - 1 Digit / Temperature - 2 Digits / Humidity - 1 Digit / Significant Weather Phenomena - 1 Digit / Cloud Cover - 1 Digit
		C	ZULU BRAVO		Remarks *(**Type, Case, Downwind Hazard Distance**)*

Figure 3, Standard NBC Message Formats

NUCLEAR/BIOLOGICAL/CHEMICAL *NBC* MESSAGE

REPORT TYPE *(Mark One)*: ☐ NBC 1 ☐ NBC 2 ■ NBC 3

TYPE OF MESSAGE *(Mark One)*: ☐ NUCLEAR ☐ BIOLOGICAL ■ CHEMICAL

FROM: Alpha Air Base

TO: Affected Unit

PRECEDENCE *(Mark One)*: ☐ R *(Routine)* ☐ P *(Priority)* ■ O *(Immediate)* ☐ Z *(Flash)*

N = Nuclear Only *C = Chemical Only* *NC = Nuclear or Chemical*

1	2	3	LETTER	MESSAGE CONTENT	EXPLANATION
	NC	NC	ALPHA	A001	Strike Serial Number
N			BRAVO		Position of Observer
N			CHARLIE		Direction Measured Clockwise from Grid North, True North, or Magnetic North *(State Which)* of the Attack from the Observer
NC	NC	NC	DELTA	040725ZJul97	Date - Time Attack Started DTG
C			ECHO		Date - Time Attack Ended
C	NC	NC	FOXTROT	FJ342432 Actual	Location of Attack or Area Attacked *(Coordinates or Place - **Actual** or **Estimated** - State Which)*
NC	NC	NC	GOLF	Bombs	Means of Delivery - Kind of Attack
NC	NC	C	HOTEL	Nerve Persistent Ground Burst	(**N**) Type of Burst, Including Height (**C**) Type of Agent, Persistency, and Height of Burst
N			JULIET		Flash-to-Bang Time *(Seconds)*
N			LIMA		Nuclear Burst Angular Cloud Width Measured at H+5 Minutes *(**Degrees** or **Mils** - State Which)*
N			MIKE		Stabilized Cloud Top Angle and/or Cloud Bottom Angle or Cloud Top Height and/or Cloud Bottom Height Measured at H+10 Minutes
	N	N	NOVEMBER		Estimated Yield
		C	PAPA ALPHA	010 KM	Predicted Hazard Area *(Coordinates)*
		C	PAPA BRAVO	Attack Area: 2 to 4 Days Hazard Area: 1 to 2 Days	Duration of Hazard Within Attack Area and Within Hazard Area *(Days)*
C	C	NC	YANKEE	0240 DGG/010 KPH	(**N**) Direction Measured Clockwise from Grid North to the Left then to the Right Radial Lines - 4 Digits Each (**C**) Representative Downwind Direction - 4 Digits / Representative Wind Speed - 3 Digits
		N	ZULU		Effective Wind Speed - 3 Digits / Downwind Distance of Zone I - 3 Digits / Cloud Radius - 2 Digits
C	C	C	ZULU ALPHA	3/14C/7/-/0	Air Stability Conditions - 1 Digit / Temperature - 2 Digits / Humidity - 1 Digit / Significant Weather Phenomena - 1 Digit / Cloud Cover - 1 Digit
		C	ZULU BRAVO	Type B Case 3 10KM	Remarks *(**Type, Case, Downwind Hazard Distance**)*

Figure 4, Standard NBC Message Formats

Notice. This AFQTP is *NOT* intended to replace the applicable technical references nor is it intended to replace hands-on training. It is to be used in conjunction with these for training purposes only.

- **Meaning of Letter items used in all NBC Reports.** The NBC standard message system is based on a code system. In the system each letter has a defined meaning for each type of NBC message.

HINT:
The majority of the time direction will be measured from grid north and The Air Force uses degrees for all compass readings

Table 1, NBC Report Codes

LINE	NUCLEAR FORMS	CHEMICAL/BIOLOGICAL FORMS
A	Strike Serial Number	Strike serial number
	Example: 01	**Example: 01**
B	Position of observer	Position of observer
	Example: NB062634	**Example: NB062634**
C	Direction measured clockwise	Direction measured clockwise from grid north,
	from gird north, true north, or	true north, or magnetic north (state which) of the
	magnetic north. (state which)	attack from observer (degrees or mils-state which)
	of attack from observer	**Example: Grid 110 degrees**
	(degrees or mils (state which)	
	Example: Grid 270 degrees	
D	Date/Time of detonation	Date/Time attack started
	Example: 081100ZDEC92	**Example: 022330ZAPR88**
E	(Not Used)	Date/Time attack ended
		Example: 022345ZAPR88
F	Location of attack	Location of area attacked
	Example: LB260300	**Example: 260300**
G	Means of delivery	Means of delivery
	Example: Aircraft	**Example: Bomblets/Mortar**
H	Type of burst	Type of burst
		Type of agent and persistency,
		P (persistent) NP (non-persistent)
		Example: Air Burst, Nerve (P)

LINE	NUCLEAR FORMS	CHEMICAL/BIOLOGICAL FORMS
I	(Not Used)	Quantity of items reported under line **GOLF**
		Example: Approximately 100 rounds
J	Flash to bang time (seconds)	(Not used)
	Example: 45 seconds	
K	Crater present or absent and diameter (meters)	Description of terrain/vegetation
	Example: 23 degrees	**Example: Area flat/sandy 500 ft above sea level**
L	Nuclear burst angular cloud width measured at H+5 minutes (state whether using degrees or mils)	(Not used)
	Example: 23 degrees	
M	Stabilized cloud top angle and/or cloud bottom angle (state which) or cloud top height and or cloud bottom height (state which) measured at H+10 minutes (state whether using degrees or mils, meters or feet)	Enemy action before and after attack Effect on troops
	Example: Top 28 degrees	**Example: Heavy artillery fire**
N	Estimated yield (KT)	(Not used)
	Example: 100 KT	
O	Reference date/time for estimated contours when not H+1 hour	(Not used)
	Example: 141300ZJUL84	
P	See under PA and PB	(not used)

LINE	NUCLEAR FORMS	CHEMICAL/BIOLOGICAL FORMS
PA	Coordinates of points to outline external contours of radioactive cloud (For radar observations only)	Coordinates of predicted hazard areas **Note:** If representative downwind speed is 10 km/h (5.41 knots) or less PA of the NBC 3 CHEM will contain only 3 digits, i.e. the radius of a circle around the center of the attacked area, in km
		Example: NB 160295 NB160306 NB 160291 NB 265300 NB 265358 NB 265242
PB	Downwind direction of radioactive cloud (state whether in degrees or mils)(For radar observations only)	Duration of hazard (days)
		Example: Attack area: 2-4 days Hazard area: 1-2 days
Q	Location of reading	Location where the sample(s) were taken and details of the sample
	Example: NB 265300	**Example: NB 160360/Air**
R	Dose rate cGy/h The words "initial", "increasing", "peak", or "decreasing" may be added. When decay rate is reported the words "decay normal", "decay fast", or "decay slow" or the actual value of decay constant may be inserted.	(Not used)
	Example: 40 Increasing	
S	Date/time of reading	Date/time contamination detected
	Example: 290900ZAUG97	**Example: 101400ZDEC97**
T	H+1 date/time	Date/time of latest survey of Contamination in the area.
	Example: 010800ZJUL97	**Example: 021300ZMAY97**
U	1000 cGy/h contour line coordinates (RED)	(Not used)
V	300 cGy/h contour line coordinates (GREEN)	(Not used)
W	100 cGy/h contour line coordinates (BLUE)	(Not used)

LINE	**NUCLEAR FORMS**	**CHEMICAL/BIOLOGICAL FORMS**
X	30 cGy/h contour line coordinates (BLACK)	Area of actual contamination (YELLOW)
Y	Direction measured clockwise from grid north to the left and then right radial lines (state whether using degrees or mils) 4 digits each	Representative downwind direction, 4 digits (state whether using degrees or mils) Representative wind speed (state whether using km/h or knots) 3 digits
	Example: 02720312 degrees	**Example: 0270 degrees, 010 km/h**
Z	Effective downwind speed (state whether using km/h or knots) 3 digits; downwind distance to Zone I (state whether using km or nautical miles) 3 digits cloud radius (state whether using km or nautical miles) 2 digits	(Not used)
	Example: 019 km/h, 025 km , 05 km	
	NOTE: If the effective downwind speed is less than 8 km/h (4.32 knots) the NBC 3 NUC will contain only 3 digits, i.e. the radius of Zone I	
ZA	(Not used)	Information on actual weather conditions: Air stability condition (1digit); Surface temperature (state whether using Celsius or fahrenheit) (3 digits), humidity (1 digit) significant weather phenomena (1 digit) cloud cover (1 digit), **Unknown parameters must be indicated by a (-) for each missing digit.**
		Example: 410C5-1
		Note: This information is obtained from a valid Chemical Downwind message (CDM). For an example refer to QTP 14.9.10.1 Simplified Chemical Plotting.
		Note: NBC 1 CHEM- is normally prepared in plain language, but code can be used. NBC 2 and 3 CHEM -is normally prepared using code, but plain language can be used.

LINE	**NUCLEAR FORMS**	**CHEMICAL/BIOLOGICAL FORMS**
ZB	(Not used)	Remarks e.g. information on type and case of chemical attack, maximum downwind hazard distance, half sector angle and verification of chemical attack and agent .
		Example: Type B, case 2, downwind distance 10km
ZI	Used for friendly bursts Effective downwind speed (3 digits) Downwind distance of Zone I (in hundreds of meters) (4 digits) Downwind distance of Zone II (in hundreds of meters) (4 digits) Cloud radius (in hundreds of meters) (3 digits)	(Not used)
	Example: ZI 030 0003 0005 005	
	Note: If line ZI is used line Z will not be used.	
	Note: If effective downwind speed is less than 8 km/h (4.32 knots), line ZI will contain of Zone I (in hundreds of meters) (4 digits) and the radius of Zone II (in hundreds of meters) (4 digits)	
	Example: ZI 0003 0005	

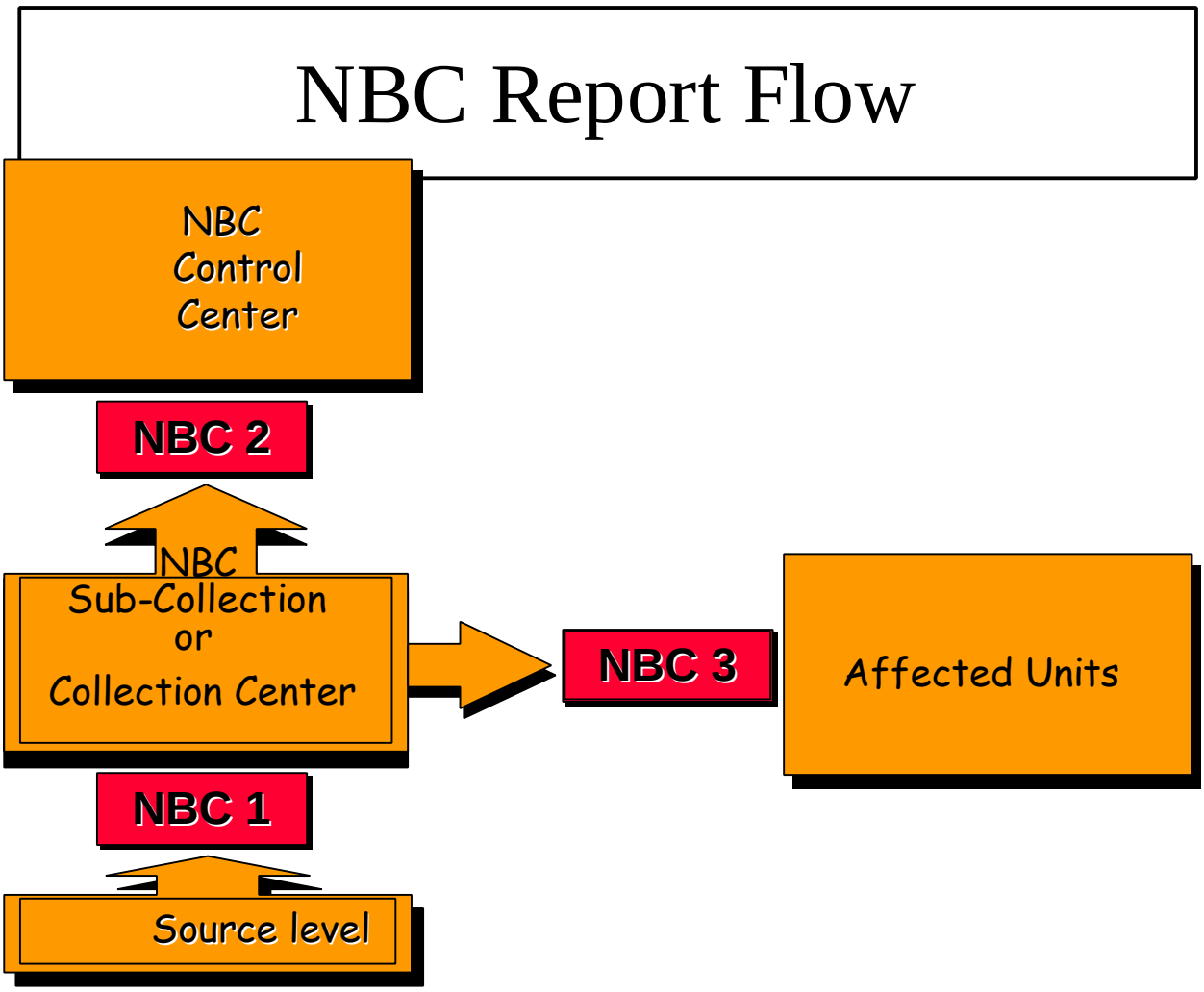


Figure 5, NBC Report Flow

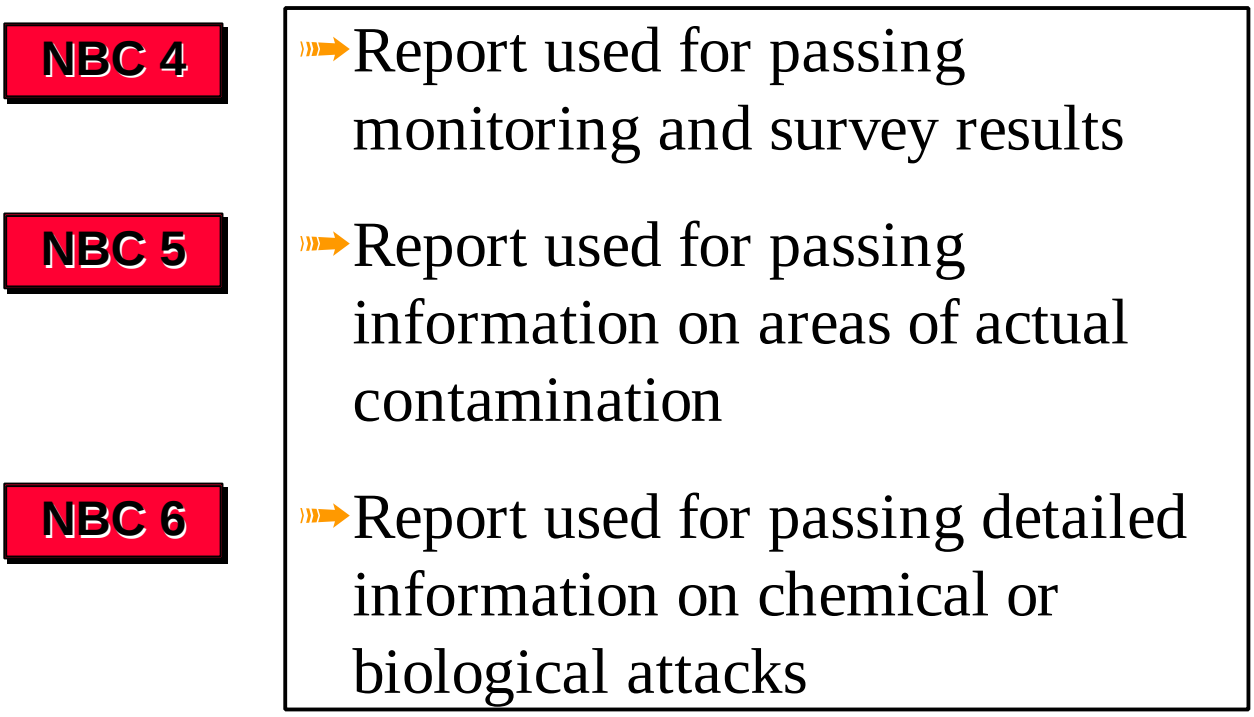


Figure.6, NBC Report Flow

Review Questions
for
Prepare NBC Reports

Question	Answer
1. How many standard NBC reports are there within the NATO NBC Reporting and Warning System?	a. 3 b. 5 c. 6 d. 4
2. Which NBC report is used to pass evaluated data?	a. NBC 1 b. NBC 2 c. NBC 3 d. NBC 4 e. NBC 5 f. NBC 6
3. What are the three levels with in the NATO NBC Reporting and Warning System?	a. Source level, NBC Sub-collection/NBC Collection Centers, NBC Control Centers b. Source level, NBC Cells, NBC Control Centers c. Source level, NBC Sub-collection/NBC Collection Centers, Wing Operations Centers d. Source level, Survival Recovery Center, NBC Control Center
4. What NBC report would you use to report the **FIRST** use of a Nuclear, Chemical or Biological agent?	a. NBC 1 b. NBC 4 c. NBC 3 d. NBC 5 e. NBC 2 f. NBC 6
5. What is the single source document for NBC Reporting?	a. ATP 45 b. QTP 14.9.3 c. AFI 32-4001 d. There is no single source document
6. What NBC report is used to report monitoring?	a. NBC 1 and survey results b. NBC 3 c. NBC 2

PREPARE NBC REPORTS

Performance Checklist		
Step	**Yes**	**No**
1. Did the trainee understand what the single source for NBC Plotting and reporting is?		
2. Can the trainee identify the NBC reporting and warning organizational structure?		
3. Did the trainee understand the responsibilities of the 3 levels within the NBC warning and reporting organizational structure?		
4. Did the trainee understand the meaning of the individual line items on an NBC report		
5. Can the trainee identify the different types of NBC reports?		

FEEDBACK: Trainer should provide feedback to the trainee immediately after the task is performed. This will ensure the issue is still clear in the mind of the trainee and the trainer.

MODULE 14 **AFQTP UNIT 9**

INTERPRET NBC REPORTS

(14.9.15.)

INTERPRET NBC REPORTS

Task Training Guide

STS Reference Number/Title:	14.9.15., Interpret NBC reports
Training References:	• ATP-45 (A) Reporting Nuclear Detonations, Biological and Chemical Attacks, and Predicting and Warning of Associated Hazards and Hazard Areas • RTP E1, Survival Recovery Center Operations • QTP 14.9.11.1 Simplified Nuclear plotting • QTP 14.9.10.1 Simplified Chemical Plotting • 3E9X1 CDC, Volume 4
Prerequisites:	• Possess a 3E931 AFSC. • Complete module 9.13 of this QTP
Equipment/Tools Required:	• Sample NBC Reports provided by the trainer.
Learning Objective:	• Trainee should be able to identify and interpret all types of NBC reports.
Samples of Behavior:	• In an NBCCC environment the trainee should be able to receive and interpret all types of NBC reports.
Notes:	

INTERPRET NBC REPORTS

NOTE:
In order to complete this module you must have a clear understanding of module 9.13.

Background: Working in the NBCCC you must have the ability to quickly interpret and prepare NBC reports. These reports are vital during any wartime contingencies which the enemy has the ability to employ Nuclear, Biological or Chemical weapons. Because of there importance in battlefield theater operations you must develop and maintain your skills through constant review and practice.

To perform this task, follow these steps:

Step 1: Receive and NBC report. An NBC report can come in many formats from a frantic call on the radio or telephone to a detailed message.

Step 2: Interpret the NBC report. Using the line item descriptions in module 19.3 or ATP 45 identify the applicable items and determine there meaning.

HINT:
Always look for line Foxtrot Hotel and Golf on Chemical reports and lines Bravo and Charlie and Juliet and Lima on Nuclear reports. These line item provide vital information as to the location and type of attack.

HINT:
Refer to the examples in module 9.13 of this QTP for detailed examples of NBC reports.

Review Questions
for
Interpret NBC Reports

Question	Answer
1. An NBC report can only be delivered by a standard message format only.	a. True b. False
2. What line on an NBC report will tell you the type of agent used? (refer to module 9.13)?	a. Foxtrot b. Hotel c. Zulu d. Delta
3. What is line Golf used for on a NBC 2 report (refer to module 9.13)?	a. Means of delivery b. Strike serial number c. Date/time of attack d. It is not used
4. What is line Alpha used for on NBC reports (refer to module 9.13)?	a. Date/time of attack b. Strike serial number c. Predicted hazard area d. Air stability conditions

INTERPRET NBC REPORTS

Performance Checklist		
Step	**Yes**	**No**
1. Can the trainee identify the different types of NBC reports?		
2. Can the trainee identify an interpret the different line items on an NBC report?		

FEEDBACK: Trainer should provide feedback to the trainee immediately after the task is performed. This will ensure the issue is still clear in the mind of the trainee and the trainer.

MODULE 14 **AFQTP UNIT 9**

ANNOTATE RADIATION AND CHEMICAL SITUATION BOARDS

(14.9.16.)

ANNOTATE RADIATION AND CHEMICAL SITUATION BOARDS

Task Training Guide

STS Reference Number/Title:	14.9.16., Annotate radiation and chemical situation boards
Training References:	• 3E951 CDC Volume 4 Disaster Preparedness Wartime Operations • AFI 10 -212 Air Base Operability • RTP E1 Survival Recovery Center Operations
Prerequisites:	• None
Equipment/Tools Required:	• None
Learning Objective:	• Trainee should be able to identify the need to annotate situation boards within the SRC and NBCC
Samples of Behavior:	• In an NBCCC environment the trainee will be able to annotate situation boards.
Notes:	

ANNOTATE RADIATION AND CHEMICAL SITUATION BOARDS

Background: Status boards within the SRC and NBCCC allow the personnel working in those area to rapidly update, assess, and brief the current situation. It is your responsibility to ensure all status boards under your control are current and accurate, mission critical decision will be based on your status boards and lives will depend on the accuracy of these boards. The actual procedures used when updating status boards will be determined locally. One base may be "high tech" with a computerized system while another will use simple charts and grease pencils.

To perform this task, follow these steps:

Step 1: Determine what type of status boards are needed. Consider the following when determining what types of status boards you may need:

- Threat
- Enemy capabilities (i.e. nuclear or chemical weapons)
- Teams that need to be tracked,
- Attack information
- Hazard areas
- Shelter locations and status
- Results of damage assessments
- Specialized team status

Step 2: Develop status boards. Remember your boards can be as simple or as elaborate as you want just make sure the provide a clear picture of the situation!

Step 3: Update the status boards. All information must be updated continuously kept current 24 hours a day for the duration of the contingency.

HINT:
If you have alternate SRC or NBCCC location ensure they have the exact same status boards as the primary and are updated when ever the primary is updated.

Review Questions
for
Annotate Radiation and Chemical Situation Boards

Question	Answer
1. There are standardized Nuclear and Chemical status boards available to Readiness personnel.	a. True b. False
2. Status boards will be updated how often?	a. Every six hours b. Prior to every shift change c. Continuously d. After every attack.
3. The alternalte SRC/NBCCC should have the same status boards as the primary.	a. True b. False

ANNOTATE RADIATION AND CHEMICAL SITUATION BOARDS

Performance Checklist		
Step	**Yes**	**No**
1. Can the trainee identify what items are needed on a situation board?		
2. Can the trainee develop a situation board?		
3. Can the trainee update a situation board?		

FEEDBACK: Trainer should provide feedback to the trainee immediately after the task is performed. This will ensure the issue is still clear in the mind of the trainee and the trainer.

MODULE 14 **AFQTP UNIT 11**

ANNOTATE RADIATION AND CHEMICAL SITUATION BOARDS

(14.11.2.2.)

ASSESS CCD REQUIREMENTS

Task Training Guide

STS Reference Number/Title:	14.11.2.2., Assess CCD requirements
Training References:	
Prerequisites:	
Equipment/Tools Required:	•
Learning Objective:	•
Samples of Behavior:	•
Notes:	

INFO NEEDED

ASSESS CCD REQUIREMENTS

BACKGROUND: Basic planning assumptions.

Real time knowledge - the enemy has real time knowledge of our air bases from open sources

May seem like we are giving our enemy a lot of credit, but this is only basic espionage

Telephone books - give information in abundance

Names on dormitory doors - give name, unit and clue to manning levels

Gate guards giving out maps when asked directions. Enemy now has a list of key facilities

Ground photos, festival, air shows, etc.

Aerial photos - pilots get pictures developed downtown, extra copy developed by local nationals and sent to unauthorized sources

Internet Capt. O'Grady example

Cannot totally deny aerial acquisition, we can only delay and disorient

Airbase positions are well known, very hard to hide

AAA, CAP and SAMs = easy disorientation

CCDMs added to IADs equals increased susceptibility to disorientation

We will slow down the enemy's attack and increase his susceptibility to our IADs

CCDMs slow acquisition or funnel attackers into IADs

May cause break off of attack and reentry into target area equals double the opportunity for kill

Find out your bases IAD capabilities develop plan that optimizes all capabilities

Disorientation caused by CCDMs will increase the Circular Error of Probability (CEP)

Larger CEP = more sorties to accomplish same goal

In one study $12,000 worth of CCD = 97% survivable. To harden to 100% survivable would cost $6 million.

(K) Threat Recognition (Threat Reference Guide)

Intelligence estimates of enemy capabilities

Aircraft - number, type, deployment

Avionics - navigation systems, radar capabilities

Armament - munitions available, munitions compatibility

Target acquisition aids

Human Eye most effective means for detecting, recognizing, and identifying targets.

detection by the unaided eye depends on size, contrast, visibility, and background brightness

Video systems

extend viewing range by enlarging the image of the target extends vision into the near IR or to light levels far below normal capabilities.

Image intensifiers - operate in the visual and near IR band allow perception in night time conditions.

Conventional T.V. Camera - most prominent for daytime target acquisition.

FLIR systems

Sensor is detecting emitted thermal energy. Object must have a radiated temperature different from the background.

(K) Permanent, expedient, expedient aspects

Permanent
Takes time to become effective

Enemy is aware of it’s existence

Ex: Forestation, Vegetation, Tone down/Patterning

Expedient

Quickly deployable for maximum effect

Only show capability, do not fully deploy until crisis ex: decoys, FOS, Netting

(K) Four Basic Principles - Work together in synergistic effort to accomplish task

Hide - concealing or screening of an object from a threat sensor

Easiest to understand (what you can't see you can't hit)

Screen only has to be tall enough to prevent observation from a very low angle. If the aircrew doesn't see the target until it is within 5,000ft, its normally to late.

Shield placement for thermal is critical - not to close or will absorb heat

Three different methods

Natural elements

Trees and vegetation: create a barrier to the attacker's visual, radar or electro-optical observation

weakened radar image - may be to weak to recognize as a target

improve quality of life

Terrain features

mountain ridge equal's natural wall between you and attacker

Causes delayed target acquisition - low flying aircraft do not want to attack over a ridge because it delays target acquisition and highlights them to IAD's

Natural obstacles can force attackers to fly known attack corridors where your IADs are waiting

Camouflage Nets

Standard nets

radar scattering/radar transparent
three patterns
2 feet between net and target
No more than six inches between net and ground

ULCANS

reversible patterns,
woodland/desert
snow/partial snow
asphalt/concrete

Smoke

AE32U-13

Mini turbine engine vaporizes 120 to 140 gallons of petroleum based smoke per hour
Generator is designed to run 30 minutes and uses 20 to 25 gallons of fuel per hour.
Complete screening is difficult but not impossible
Smoked area should be considerably larger than the target area.
Large area decoy smoke screens should be considered.
Smoke screens versus smoke blankets

Blend: process of making object look like or appear to be a part of the background by using tone down/contrast reduction or shaping/patterning

Choice of tone down/contrast reduction or shaping/patterning is dependent on the character of the background (simple or complex) and the character of the object to be camouflaged.

Uniform (simple) background - tone down or contrast reduction is usually the best approach

Distinct patterns, colors, brightness etc. (complex), shape disruption or patterning is the best approach

Both methods must be considered at both the scale of the entire installation as well as at the scale of the individual structure

5 factors to keep in mind

Size: the bigger the object the easier it is to detect

Shape: Shapes of military buildings are different than civilian, this increases their conspicuity

Pattern: Trees in a row, buildings in a square, standardization all create patterns that increase recognition

Texture: Natural vegetation versus well kept lawns. Changes in texture are easily recognized

Shade and shadow: pronounced on thermal and infrared. Shadows enhance contrast

Tone down: reducing visual brightness/ Contrast reduction

Limiting factors for detecting targets with the human eye

Target color versus background contrast

Minimal contrast between target and it's environment equals more difficult to see no matter the outside influences

Effective in the visual and radar bands less effective in the thermal band

Effective on small structures larger equals increased background complexity

Shape disruption/modification

Mother nature made no straight lines, detection of straight lines indicates human influence

Break up regular shapes

plant trees

paint building numbers vertically

Disguise
Difficult to implement because of its complexity

Make a target look like a non-target

Boeing plant in Seattle 1940's

- Disney constructed
- $12 million
- tarp with balsa wood fixtures

smoke directed through chimneys on buildings

parking area under tarp

Simpler is better

three buildings together, essential is in the middle

hide the first building - use your imagination

disguise critical building to like the one you just hid

build cheap mock up of the building on the end of the row.

Disguises work best when integrated with decoys

Decoys: **Decoy Cues, Decoy Targets, and Distracters**

Decoy cues

a false imitation of an actual orientation point the pilot uses to find a target

goes from largest to smallest cues ex: smokestack,
intersection, radar tower, fence, POL area

adds confusion, delays, and disorients

talk to the TDO to find clues for your installation they know the probable pull up points for your installation

Do ground and aerial surveys - find the visual aim points
decoy them on potential flight paths

Hide real target, replace with decoy

Enhance signature = increased chance of targeting

FOS - False Operating Strip

sets of two 25 foot by 1000 ft sections

reversible - aged concrete and asphalt

10 person crew to lay: 1 truck driver, 2 people to pull out the FOS and 7 to anchor it

cut a shallow trench at the edge to emphasize the outline

Decoy Targets - Two Dimensional and Three Dimensional

munitions absorbers

place where impact will cause minimal damage -
distance from targets for increased survivability can be obtained from **FM 5-103 1985**.

Ideally decoys should be placed earlier in flight path than actual so that the decoy will draw initial fire draw initial fire

position in believable target areas

reorient and relocate a stationary decoy is unrealistic

Two dimensional

Dusty Demo - Cannon AFB Seven attacking
F-16's, six attacked the 2-Dimensional Decoy instead of the actual F-16 parked a few hundred feet away

easy to construct most effective is a silhouette with an illumination angle of 20 degrees. Decoys appear realistic from plus or minus 10 degrees of that angle

Three Dimensional

JCCD test results for decoy implementation

JCCD - Decoy with subdued actual target

75% reduction in target attacks for visual Pop delivery

Aim point error increased

visual - 150 ft
FLIR - 1200 ft

JCCD - Imagery Intelligence

Reventment Aircraft park

Baseline - 7 hits/ 8 available targets

No decoy- 8 hits/ 8 available targets

W/ decoy - 1 hits/ 8 available targets

Three Dimensional Types

Steel and Canvas

85 minutes assembly time

Two hour disassembly time

Continuous Air Inflatables

High visual fidelity

Passive IR and RF

F-16 , Future Generation Fighter and fuel truck in development

Distracters

lightly repair damaged useless buildings and make good buildings appear blown up

Smoky SAMs - mimics Stinger missile -
CONOPS is classified

Laser warning defeat

detects and decodes laser targeting

Regenerates spot into bomb safe area by capturing guidance system of weapon

OSD/Army prototype tests have been excellent

GPS Jammer

Area and point protection

Program in concept exploration

Bright light of flashes off to the side - draws attention and distracts

Decoy signs are unproductive - enemy probably doesn't read English and is working off of a map anyway. Confuses incoming forces

Review Questions
for
Assess CCD Requirements

Question	Answer
1. Individual reports are the best way for a control center to gather information.	a. True b. False
2. What should organized reports contain?	a. Casualties b. Facility damage c. UXO d. All of the above
3. UCC passing on the alarm condition change, is an example of?	a. Upward flow of information b. Downward flow of information c. Duplication of information
4. Individuals reporting a UXO to the UCC, is an example of?	a. Upward flow of information b. Downward flow of information c. Duplication of information

ASSESS CCD REQUIREMENTS

Performance Checklist		
Step	**Yes**	**No**
1. Set the trainee in a control center environment.		
2. Did the trainee know what information is required for the position?		
3. Did the trainee identify who was in the upward communication chain?		
4. Did the trainee identify who was in the downward communication chain?		
5. Was the trainee able to communicate with everybody in the communication chain?		
6. Did the trainee coordinate and consolidate all inputs to eliminate duplication?		

FEEDBACK: Trainer should provide both positive and/or negative feedback to the trainee immediately after the task is performed. This will ensure the issue is still fresh in the mind of both the trainee and trainer.

MODULE 14 **AFQTP UNIT 11**

CAMOUFLAGE NETTING

(14.11.2.3.1.)

CAMOUFLAGE NETTING

Task Training Guide

STS Reference Number/Title:	14.11.2.3.1., Camouflage netting
Training References:	INFO NEEDED
Prerequisites:	
Equipment/Tools Required:	•
Learning Objective:	•
Samples of Behavior:	•
Notes:	

CAMOUFLAGE NETTING

Background: The net comes in either a radar scattering or radar transparent configuration.

- The net is reversible with a fall/winter and spring/summer side
- The net is designed to break up the contours of the object being camouflaged.
- It is primarily designed to mimic forested or vegetated areas.
- A minimum of two feet is necessary between the net and the object to be camouflaged.
- A maximum of six inches is allowed between the net and the bottom of the ground.
- A set consists of a large hexagon shaped net and a smaller diamond shaped net.
- Patterns available include: woodland, desert, and snow.
- The cost for the net is $647.00 per set.
- The support system is $206.00 per set.

Review Questions
for
Camouflage Netting

Question	Answer
1. Individual reports are the best way for a control center to gather information.	a. True b. False
2. What should organized reports contain?	a. Casualties b. Facility damage c. UXO d. All of the above
3. UCC passing on the alarm condition change, is an example of?	a. Upward flow of information b. Downward flow of information c. Duplication of information
4. Individuals reporting a UXO to the UCC, is an example of?	a. Upward flow of information b. Downward flow of information c. Duplication of information

CAMOUFLAGE NETTING

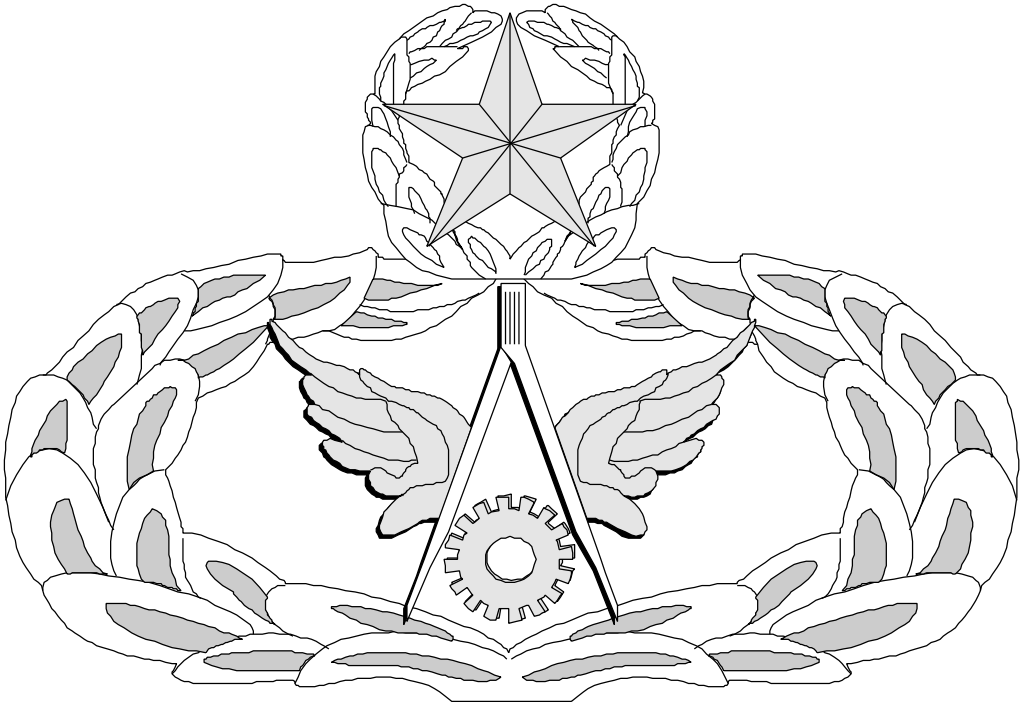
Performance Checklist		
Step	**Yes**	**No**
1. Set the trainee in a control center environment.		
2. Did the trainee know what information is required for the position?		
3. Did the trainee identify who was in the upward communication chain?		
4. Did the trainee identify who was in the downward communication chain?		
5. Was the trainee able to communicate with everybody in the communication chain?		
6. Did the trainee coordinate and consolidate all inputs to eliminate duplication?		

FEEDBACK: Trainer should provide both positive and/or negative feedback to the trainee immediately after the task is performed. This will ensure the issue is still fresh in the mind of both the trainee and trainer.

Air Force Civil Engineer

QUALIFICATION TRAINING PACKAGE (QTP)

REVIEW ANSWER KEY



For

READINESS

(3E9X1)

MODULE 14

WARTIME OPERATIONS

Notice. This AFQTP is *NOT* intended to replace the applicable technical references nor is it intended to replace hands-on training. It is to be used in conjunction with these for training purposes only.

EVALUATE THREAT TO AIR BASES

(3E9X1-14.1.)

Question	Answer
1. Who will have the most current information on the threat to your base?	Intelligence
2. Who is best qualified to identify the weaker areas of the base from ground attacks?	Security Police
3. Who is best qualified to identify possible attack corridors for enemy aircraft?	Operations
4. Who should you contact to determine if the use of NBC weapons are possible?	Intelligence

DETERMINE PROTECTIVE EQUIPMENT REQUIREMENTS

(3E9X1-14.3.4.)

Question	Answer
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CONDUCT WARTIME TASKS WEARING PERSONAL PROTECTIVE EQUIPMENT

(3E9X1-14.3.5.)

Question	Answer
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DETERMINE APPROPRIATE BIOLOGICAL PROTECTIVE MEASURES

(3E9X1-14.4.6.)

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IMPLEMENT EXPOSURE CONTROL ACTIONS

(3E9X1-14.6.3.1.)

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CONDUCT CONTAMINATION CONTROL AREA (CCA) PROCEDURES

(3E9X1-14.6.3.3.)

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EMPLOY PROTECTIVE ACTIONS

(3E9X1-14.7.3.)

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EVALUATE ADEQUACY OF LOCAL ALERTING SYSTEM

(3E9X1-14.8.1.)

Question	Answer
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ADVISE ON USE OF WARNING SIGNALS

(3E9X1-14.8.2.)

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ESTABLISH INFORMATION FLOW

(3E9X1-14.9.2.)

Question	Answer
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DIRECT ACTIVATION OF SPECIALIZED TEAMS

(3E9X1-14.9.3.)

Question	Answer
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MONITOR AND DIRECT READINESS OF NBC FORCES

(3E9X1-14.9.4.)

Question	Answer
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MONITOR PASSIVE DEFENSE MEASURES

(3E9X1-14.9.5.)

Question	Answer
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DIRECT MONITORING TEAMS ACTIONS

(3E9X1-14.9.7.)

Question	Answer
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RECEIVE AND CONSOLIDATE REPORTS

(3E9X1-14.9.8.)

Question	Answer
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READ MAPS/USE LOCATION REFERENCE MATERIALS

(3E9X1-14.9.9.)

Question	Answer
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SIMPLIFIED PLOTS (3E9X1-14.9.10.1.)

DETAILED PLOTS (3E9X1-14.9.10.2.)

Question	Answer
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ASSESS CHEMICAL HAZARDS

(3E9X1-14.9.10.3.)

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DETERMINE CHEMICAL PERSISTENCY

(3E9X1-14.9.10.4.)

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SIMPLIFIED PLOTS

(3E9X1-14.9.11.1.)

Question	Answer
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PREPARE NBC REPORTS

(3E9X1-14.9.13.)

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INTERPRET NBC REPORTS

(3E9X1-14.9.15.)

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ANNOTATE RADIATION AND CHEMICAL SITUATION BOARDS

(3E9X1-14.9.16.)

Question	Answer
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ASSESS CCD REQUIREMENTS

(3E9X1-14.11.2.2.)

Question	Answer
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CAMOUFLAGE NETTING

(3E9X1-14.11.2.3.1.)

Question	Answer
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